

Newly-qualified women worst placed for jobs—NATFHE

by David Hencke

Newly qualified women certificate of education students are the worst placed for seeking teaching jobs, according to a survey published at the weekend by the National Association of Teachers in Further and Higher Education.

The survey estimates that about 4,000 or 12 per cent of the 34,000 newly qualified teachers failed to get posts last September. It is based on returns from 118 colleges and polytechnic departments covering 20,817 students available for employment.

The survey shows that the percentage of unemployed women (13.1 per cent) is higher than men (9.1 per cent). The lowest unemployment is among Bachelor of Education graduates (8.1 per cent) while the highest is among three-year certificate of education students (13.4 per cent). A total of 9.9 per cent of postgraduate certificate of education students are unemployed.

Students who restricted their applications to particular areas fared worse than those prepared to apply all over the country. The

survey shows that more than half those still seeking jobs restricted themselves to particular areas and 304 students described themselves as immobile.

The report adds: "It is surprising to find that half the men in this group were limiting their applications in this way and that 40 of them were described as 'mobile'." It is also of interest, and of concern, that a higher proportion of men were not looking for teaching appointments, 38.3 per cent as compared with 20.2 per cent of women."

The survey shows an increase in students taking an extra year's work. A total of 21.6 per cent of students completing a certificate of education course continued with a BEd degree. Of the 4,591 BEd graduates 44 continued their studies with masters degrees.

Mr Edwin Pearson, principal of Worcester College of Education, who compiled the report, adds that out of the estimated 4,000 some 25 per cent were not immediately seeking jobs. Of the remaining 75 per cent about 1,150 are immobile and seeking appointments outside teaching.

Accelerating cancer research

Important research into cancer has been made possible at Brunel University by the installation of a four million electron volt linear accelerator.

The machine, one of the first generation of clinical accelerators, was formerly used for radiation therapy at Mount Vernon hospital where it had been superseded by a more clinically versatile machine. An £18,000 grant from the Cancer Research Campaign was used to remove and install the machine in a purpose-built shielded laboratory, for which the university provided £10,000. Bought new, such equipment would have cost at least £100,000.

Dr Robin Willson, a research fellow in the department of biochemistry, was principally responsible for the new laboratory, which is the first of its kind in a university department.

It is studying the underlying mechanisms that cause cancer using a technique known as pulse radiolysis to generate free radicals. These are highly reactive molecular fragments which are believed to interact with other molecules in the body, resulting in cancer.

Free radicals are formed in the body by external agents such as X-rays, ultraviolet light, and chemical substances that are inhaled, absorbed through the skin or taken in diet.

They are too short-lived to be detected in the body, so investigation relies on artificial production.

Cranfield contracts up 45 per cent

Research and development contracts worth £1.5m were sponsored at Cranfield Institute of Technology in 1974/75. This figure, a 45 per cent increase over the previous year, was given in its recently published annual report.

"Even allowing for inflation this constitutes a significant increase, and is recognition of Cranfield's expertise in these fields", the report said.

The total income of the institute exceeded £5m with the largest proportionate increase coming from sources other than the Department of Education and Science. The recurrent grant from the DES, now reduced to just under 50 per cent of the total income.

Cranfield's recurrent grant from the DES for the triennium 1975 to 1978 is as follows: £3,023,000 for 1975-76, £2,905,000 for 1976-77, and £2,865,000 for 1977-78.

These figures are a mid-1975-76 prices, and for the second and third

years are to be regarded as maxima, liable to reduction by any cuts in public expenditure.

Furthermore, they are based on a growth in student numbers to 750 full-time students and 3,000 short course students by 1977-78.

In 1974-75, there were 572 postgraduate students at Cranfield, and 2,420 took short courses. The addition of the National College of Agricultural Engineering at Silsoe as a school of the institute will increase the number of postgraduates by 100. There will be about 100 undergraduates studying agricultural engineering at Silsoe. The teaching at the Cranfield campus will remain entirely postgraduate.

The Cranfield Unit for Precision Engineering (CUPE) continued to be totally self-financing. Both industrial units—CUPE and the National Materials Handling Centre (NMHC)—were involved for the first time in the teaching of MSc courses at the institute.

TWO WORKSHOPS ON MANAGING ACADEMIC DEPARTMENTS

The University of London Teaching Methods Unit is running 2 residential workshops on "Managing Academic Departments" in London. The first is "Running an Academic Dept" and is for heads of academic departments or equivalents only. Issues to be considered will vary according to participants' wishes but may include: resource allocation, leadership, staff training, etc. 29/31 March 1976. Fee £48.50

The second is for deputy heads or equivalents and is entitled "Problems of Academic Depts". Issues might include: course planning, innovation in departments, negotiations with staff, etc. 1/3 April 1976. Fee £43.00

For full details contact Owen Heath, UTMU, 65 Gordon Square, London WC1H 0NT, or telephone 01-580 6451.

UTMU

17 Cambridge lecturers plan exam strike unless conditions improve

by Alan Munton

Seventeen members of the faculty of English at Cambridge University have said that they will refuse to act as examiners in 1977 unless effective steps are taken to improve the quality, organization and conditions of teaching in the faculty. Their withdrawal would almost certainly cause the collapse of the English Tripos examinations.

Undergraduate teaching at Cambridge is done both through the university, and through the colleges. University lectures are given by university teaching officers, and in individual and small group tuition by the colleges. It is college teaching that is said to be breaking down.

The colleges employ college lecturers, research fellows, postgraduate research students and others to do their teaching. In English, these college teachers are becoming seriously overworked, and it is increasingly difficult to find suitably qualified people to teach all the subjects required.

In a letter to the chairman of the English faculty, the protesters point out that in 1974-75, the staff/student ratio was 1:23, far worse than the arts faculty's average of 1:14.

There were 34 university posts for 749 undergraduates reading English. The existence of 16 college lecturers and 13 research

fellows "has helped to prevent a complete breakdown of the faculty's teaching and examining, but it is no way an answer to the problem", the letter says.

Even if all university teaching officers teach for the maximum stipulated number of hours, there is still extra teaching to be done. This is done either by members of the faculty working in excess of already heavy teaching loads, or by those employed at piece-rates, who have to work inordinate hours to get a living wage", says the letter.

"Many of the latter are highly qualified, others are not. It is clearly unfair that so large a proportion of the faculty's teaching should be done by those who receive least for it, either in payments or in security of tenure."

"It is scandalous that this situation should prevail in a university where students are given equal opportunities to all students, no matter which subject they may be reading." Teaching demands are so great that research fellows have to "ruthlessly" refuse to do it in order to pursue their own research, the letter adds.

The English faculty is being asked to initiate a survey of college teaching, and then to establish general principles for conditions of employment of teachers in colleges. These conditions should be in

accordance with the national agreements between the Association of University Teachers and the Universities, says the letter.

The signatories are concerned that there should be equality of practice between colleges, of pay for comparable posts, and of security of tenure for comparable work. The contracts between search fellows and college lecturers should be recognized by the colleges.

Professor Peter Clemoes, a member of the faculty board of English, commented on the letter: "I play a constructive part in the faculty board's future organization of its teaching. Some of its proposals could be dealt with by the Faculty Board itself. Others depend on the central university authorities and the colleges."

One limitation upon teaching bears that until last October no university regulations prevented professors from teaching non-graduate students. They are now allowed to teach tutorial groups for four hours each week. Last year Trinity College astonished the English faculty by refusing to appoint a teaching Fellow in English, although it is known that professors and lecturers from other universities applied to the post.

Lanchester joins forces with Lucas centre

Lanchester Polytechnic has joined forces with the J. Lucas group research centre at Birmingham to combine resources on industrial research, consultancy work and development projects.

The arrangement will bring together the departments of engineering, design and manufacturing processes at the Lucas centre, and the general areas of engineering, applied science, management and business studies at the polytechnic.

Mr Robin Shepherd, industrial liaison officer at Lanchester, said: "One particular idea might be where we have done basic research into new materials for industry which needed to be carried through into process and perhaps required the construction of pilot plants to test the methods of production. As Joseph Lucas has pilot plants, they could continue the work that we started here."

It is hoped that eventually other industrial concerns may be involved in the scheme which could then provide a network of facilities and avoid duplication of effort.

"We have many smaller firms, as well as the larger ones, coming to us for assistance," says Mr Shepherd. "We see this as an extension of our facilities to these firms."

Lucas agree that his new firm could be of benefit to smaller firms. As Mr Eric Mitchell, its contracts manager points out, smaller firms have always had access to polytechnic facilities, but it should be easier for them to have access also to a firm organization like Lucas.

Lanchester was one of the first polytechnics in the country to establish an industrial liaison centre, which has been rechristened the industrial liaison bureau. It deals with hundreds of inquiries annually concerning industrial and commercial problems.

Its consultancy and advisory work has increased rapidly in recent years, and this benefits the local community.

In addition to industry and commerce, local authorities, private individuals, government departments and educational establishments are among those being helped by the bureau.

Half overseas students unplaced

Nearly half the applicants for sandwich and vacation training to the Overseas Students Advisory Bureau last year were not placed. Mr David Grantley, director of OSAB, writes in his annual report for 1974/75.

Out of a record 1,166 applications last year, 566 students were not placed or dealt with by the bureau. Of those, nearly half were on sandwich courses where training was an integral part. The previous year only 44 sandwich course students were not placed.

"It is to be hoped that OSAB figures exaggerate the number of students who did not receive training," Mr Grantley writes.

The bureau placed some 152 students in training, which was 100 less than the year before, but a great improvement on the number of placements in 1971, the last period of recession.

Some students could have been placed in better economic circumstances, he says. Altogether 250 offers of training places by companies were received, but many were later withdrawn.

longer available, he says. He affected at least 40 mechanical engineering students and a further 10 other students asked to leave the middle of their training for the same reason.

The number of companies offering training was 109, 21 less than the year before. Placement were particularly hard to find in the construction industry, and in chemical, rubber and textile industries.

One reason for low placement was that some students were not work permits for summer vacation and graduate training because of employment had first to be obtained by British students drawing monetary benefit.

Another reason was that Government legislation, such as the Immigration Act, has been a hindrance to employment for foreign students in more popular areas.

The regulations were applied by the Department of Employment for the year ending 1975. The department took into account individual circumstances, needs of developing countries, and the need for training.

One graduate in three goes into education

by David Walker

A third of the graduates from British universities are immediately absorbed back into the education system either as teachers, researchers or on courses of further training, according to figures from the Universities Grants Committee.

Of those who went into full-time jobs when they graduated in 1973-74, just under 30 per cent were employed in the public service, including local government and the National Health Service, but excluding education. Only 15 per cent of the total went into industry.

The statistics come from the UGC's annual survey of the "first destination" of university graduates in which university careers services traced where the 55,359 first degree students were at the end of 1974.

The UGC's figures show several important trends. More graduates were going into the public service, but the numbers getting jobs in industry and commerce also increased slightly. The total numbers of those going into further education or training after their degree declined from nearly 30 per cent in 1973 to just over 26 per cent in 1974.

Both men and women showed less inclination to go straight into teacher training although 13 per cent of the total numbers of graduates

in 1974 still chose to continue their education in this way.

The UGC has published for the first time a survey of what are likely to be the eventual jobs of those who left university recently. The generation who graduated in 1970-71 will probably supply about 12,100 people for the educational world, representing a quarter of the total of students graduating that year.

Roughly a third of those who left university with a higher degree in 1974 also went into education in some form, whether it was into postgraduate research work or teacher training or straight into teaching in schools, colleges or universities.

The UGC classify the individual universities according to the jobs their graduates head for and some of the more likely destinations. The universities which sent over half their first degree graduates straight into jobs, the bulk of which were probably in industry and commerce, were the former colleges of advanced technology, including Aston, Brunel, City University, Southampton, Loughborough and Surrey.

Others in the same category included Birmingham, UMIST, UWEIST, Heriot-Watt and Strathclyde. By comparison only a quarter of university graduates in 1973 went straight into a full-time job in Britain.

First Destination of University Graduates 1973-74, University Grants Committee (HMSO, LBS).

Halsey attacks the 'uncommon men' of education

Civil servants at the Department of Education are simply a political pressure group and are unrepresentative of the education system as a whole, a House of Commons committee investigating the DES has said.

Dr A. H. Halsey, of Oxford University, formerly director of a DES project on educational priority areas, went on to condemn civil servants who ran the education system while sending their own children to private schools.

In answer to questions from Mr Bryan Davies, Labour MP for the North, a member of the Select Committee on Expenditure on Education, Halsey said that the DES was "uncommon men" recruited predominantly outside the state system of education. He suggested that their base of knowledge, particularly of the social sciences, could be larger.

Dr Halsey asserted that civil servants had a proven role in policy making and cited the case of the creation of the polytechnics, but he asked if their qualifications for the job were adequate.

Dr Halsey was giving evidence with Professor Maurice Peston of Queen Mary College, London, an economist who recently served as a special adviser to Mr Prentice, Secretary for Education, until last summer. Professor Peston described the DES civil servants as originators of policies in their own right, who carried policies over from one administration to another but he praised their "receptivity" to information from many diverse sources.

He said: "On the polytechnics, officials and Ministers at the DES have been the leading forces. They have been ahead of educational opinion, and if anything have had to encourage and create the relevant pressure groups."

He criticized the speed of DES civil servants' response to new

policies, saying that they had not been quick enough to act on the Labour Government's policy on comprehensive education. But Professor Peston advocated a strong interventionist DES as a monitoring and inspecting body.

He suggested an educational task force, including inspectors, should be set up to sort out schools with problems not soluble by the local education authority.

Professor Peston and Dr Halsey joined forces in urging that decision making in education should become more open and that the DES improve its statistics and use of research.

Professor Peston said: "The problem is to distinguish 'thinking aloud' from actual policy statements, and depends on the outside world being willing to respond rationally to the former. This does not always happen as regards, for example, the attempt to reorganize the colleges of education in an open way led on occasion to the public abuse of officials rather than reasonable debate."

Despite that officials should try to sell out what they can, the criteria of choice they employ, so that, for example, the building programme should not be the mystery so many people find it. Above all many more departmental papers of the Programme Analysis Review kind are needed."

Dr Halsey argued the need for keeping track of what was happening in education through time. More longitudinal studies of particular age groups were needed. He said that all too often planning relied on inadequate information.

The committee also heard evidence from representatives of the Church of England Board of Education, the Catholic Education Council and the Free Church Federal Council, who urged better monitoring of educational performance and the need for more information from the DES.

A measure of maturity

by Frances Gibb

Science and technology students at Teesside Polytechnic increased last year by 20 per cent compared with the previous year. Dr J. Houghton, the polytechnic's director, told graduates at the polytechnic's presentation ceremony last week.

The national polytechnic increase was about 10 per cent.

Entrants in business studies, humanities and social studies had increased by 24 per cent compared with the previous year. Dr Houghton said that the polytechnic had an important part to play in the polytechnic, he said. Over 130 research projects were going on at present.

The Government's currently prescribed intake in humanities and social sciences had had to be restricted by the polytechnic's difficulty in finding enough residential accommodation, he said. "It would be a tragedy if that had to be a limiting factor on our entries in the future."

The growing number of students reading for higher degrees within the polytechnic was a measure of its maturity, Dr Houghton went on. Research links to industry and the community had an important part to play in the polytechnic, he said. Over 130 research projects were going on at present.



Something cooking at Buckingham?—Mrs Thatcher tours campus.

'Don't feel sorry for new college'—Mrs Thatcher

by Brian MacArthur

The University College at Buckingham was officially opened on February 6 by Mrs Thatcher, leader of the Opposition, and Sir Edgar Williams, Warden of Rhodes House, Oxford, during a simple ceremony, in full academic dress, at Buckingham Palace Church.

It marked the birth of the first private "university" opened in Britain this century. Between 70 and 80 students are now reading for degrees in law, economics and politics there. The courses are read over eight terms in two 40-week years and have been accepted by the Law Society and some universities as the equivalent of a degree. The tuition fee is more than £1,500 a year.

Mrs Thatcher said that signs of a genuinely fresh approach to the real conditions of modern education could be detected in the innovation that Buckingham had pioneered.

"These university teachers who have the secure backing of government funds may well be inclined to feel sorry for a new institution so much preoccupied with its own budget and with that of its students, but I think such compassion would be misplaced."

"A relative indifference to cost was a luxury of easy times, and we may look to the University College as an experiment, we hope practical, in thinking out in contemporary terms what is essential to education by contrast with what we have hitherto become accustomed to enjoy."

"This challenge is one faced by everyone in the Western world, and a new institution untrammelled by

past habits may well be in the best possible position to respond to it. Besides, challenges have their benefits. They involve far greater personal effort and ingenuity than is sometimes obtained by making life too easy."

"You have already responded to the challenge of cost with refreshingly inventiveness, and your situation is there to remind us all that it is not a law of the universe that the pursuit of learning and culture should inevitably be a comfortable and riskless engagement."

Mrs Thatcher added that belief in education as the national salvation had led to inevitable disappointment. It had been partly responsible for the lack of favour into which education had fallen recently.

"The inauguration of the University College at Buckingham is an educationally difficult time is therefore a sign of hope that teachers may now be encouraged to take their destinies more into their own hands and to embark upon institutional adventures which do not involve the lobbying of public opinion or government departments."

Sir Edgar Williams said that he hoped that students would leave Buckingham with at least two attributes in particular: "An understanding of the rules of evidence and an unwillingness to persecute with that selective judgment that includes selective neglect; with sharper minds but not with sharper tongues or elbows."

The first year's annual fee will be £1,800, and it is estimated that it will cost students £900 to maintain themselves. This year about £7,000 has been paid in scholarships to 30 students.

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Formal training sought for college lecturers

by David Hencke

Newly-appointed lecturers to polytechnics and colleges should be required to have teacher training from 1981 onwards, it has been recommended to Mr Mulley, Secretary of State for Education, in a confidential report.

The report also recommends a comprehensive in-service training programme for existing lecturers so that 5 per cent of college staff could be released to meet "a very substantial backlog of untrained teachers in further education."

The proposals have been made by a sub-committee of the Advisory Committee on the Supply and Training of Teachers which reported last June. The sub-committee, chaired by Professor Norman Haycock, has kept the report secret for eight months while waiting for a reply from the Department of Education and Science.

It shows that in 1973 only one-third of 66,500 lecturers employed in polytechnics and colleges are trained in the sense of having taken a full-time course of teacher training leading to a certificate of education.

Most of the training takes place in four specialist colleges of education in Wolverhampton, Bolton, Garnet College, London, and Huddersfield, and in a joint course run at University College, Cardiff, and the University of Wales Inst-

tute of Science and Technology. The report recommends that the most serious shortage of about 25 per cent year pre-service courses to 1,700 places in 1981 at the five existing centres. It says no new centres should be created, but if a sixth centre is created at a later date stringent conditions should be laid down to cover its operation.

In addition, the report recommends that 1,250 replacement teachers should cover an induction programme and 2,700 places should be available in 1981 for in-service training for existing staff.

The report says that the 1981 training requirement should be met either by pre-service training or by a systematic induction training course—normally during a lecturer's first year of service. Existing staff without training qualifications should not undertake more than three-quarters of a full-time teacher's normal contact hours and should be released for professional training at least one day a week for one academic year plus a block release course.

In-service training should be planned and coordinated at regional, level and Regional Advisory Councils should be asked to draw up plans to submit to the DES.

The proposals come in a period when teacher training places are being reduced and there is spare capacity to expand in-service provision in colleges and polytechnics.

Keeping a doctor in the family

by John Ross

Entry to medical schools remains socially exclusive, according to a survey of more than 300 students at Birmingham University medical school.

The results of the survey were recently published in *New Society*. The authors, Dr. Kennedy Cruickshank, a house surgeon at Birmingham Accident Hospital, and Dr. Chris McManus, a house surgeon at Queen Elizabeth Hospital, Birmingham, claim that the "exclusiveness" of medical schools was increasing rather than decreasing.

"Our survey, nearly 10 years after the Todd report, establishes once again that your chances of entering a medical school are considerably enhanced if your father is from social class 1, if he is a doctor, if you are a man, and if you have been to a public school," they said.

Half of the Birmingham students had professional fathers. Half of the students were recruited locally. A third of the students were women (the Todd report found only one quarter), but the study revealed considerable discrimination against women in that they had to be better qualified than men to get into medical school.

The article confirmed the view of the Todd report, that medical students whose fathers were doctors were more likely than others to have to resist examinations, as were students from public and direct grant schools.

"If ability to pass examinations, and the likelihood of dropping out, are measures of motivation to study medicine, then our schools are selecting in favour of those with least motivation."

"It may be wrong to draw this inference; it is certainly difficult to say which will become 'good doctors' and where he or she will practice. But it does seem fair to assume that doctors selected from middle or upper-class backgrounds will eventually seek to work in areas similar to their own social background. This could be an influence in the notorious maldistribution of medical care."

Dr Cruickshank and Dr McManus felt that no change in selection procedures could be expected. Pointing out that there were 10,746 applicants to medical schools in 1973, of whom 3,147 were successful, they suggested developing training schemes for "intermediate" medical personnel in basic techniques of examination and treatment.

Concern over the proportion of women entering medicine was also expressed recently by Dr David Williams, Minister of State at the Department of Health and Social Security.

Speaking last week to the Cambridge University medical society, Dr Owen said: "In assessing the need and timing for further medical school intake, we also have to take account of the increasing number of women doctors."

"We must allow them proper opportunities to develop their careers. At present about 25 per cent of medical students are women, this may well increase to 50 per cent by the 1980s and at long last the percentage of women doctors will reflect the percentage of women generally."

Professor retiring

Professor G. R. Bozall, who has been vice-chancellor and principal of the University of Witwatersrand, Johannesburg, since 1969, is to retire. Professor Bozall has been a member of several committees such as the Sarswacker Commission of Enquiry into University Education of Engineers, the Prime Minister's Scientific Advisory Council and the Vries Commission of Enquiry into South African Universities.

Correction

It was incorrectly stated in *The Times* last week that Imperial College, London, had in 1974-75 shelved plans to develop life sciences, computer sciences and interdisciplinary studies in energy, the environment, polymer science and technology as an economy measure. The college was able to carry out part of the expansion planned in these areas in spite of constrained financial circumstances.

She was speaking at the Catholic University of Louvain (Leuven) where she had just received an honorary doctorate.

programmes concentrate
other training of teachers abroad
work. Last month a similar Un
University team visited Saudi Ara
advise on distance teaching
King Abdul Aziz Univers
Jeddah.

During the Michaelmas term, our terminal classes at Halifax, Liverpool, Wiley and Exeter, and professional classes in London, as well as three more terminals in the same areas, and a short course—amounting to over 100 lectures—a programme already, there will be an examination bank, well stocked with all the known combinations and permutations of question, simply awaiting instructions from a computer programmer. But what, besides a computer, will have to be built? And, examining will have to

John Burrow
The author is senior lecturer
sociology at the extra-mural department of London University.

maintains its familiar student posture. For many colleges the choice whether they will continue to use some of their laboratories and workshops to continue in merely passive use by male students trick-

He ought to defer his statement until the Department has done some more homework on the letter and, especially, the spirit of the Act. Perhaps the formidable ladies of the Department and the Inspectorate could give a lead.

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Foreign faces behind the UMIST facts

The power systems engineering course at the University of Manchester Institute of Science and Technology is becoming a national celebrity.

With just two of its 29 students coming from the United Kingdom, it is being frequently cited as evidence in the growing overseas students controversy. But behind the bare statistics, what is the course really like, and who are the people on it?

The course is about 10 years old, is one of two in the country, and lasts from October until October. Two terms of teaching are followed by an examination, and then a dissertation. Successful students are awarded the MSc degree.

There are no women on the course. The ages of the men range from 21 to 42, with a median age of 27. Nine are married, and 17 have spent some time in industry.

The students come from everywhere except North America and the EEC countries. Four each come from Venezuela and Greece, three from Hong Kong, two each from the United Kingdom, Sudan and Iraq.

Other countries who have students at the course are Turkey, Cyprus, Lebanon, Taiwan, Ceylon, Malaysia, India, Nigeria, Australia, Yugoslavia, Brazil and Chile.

Twenty-one of these students got their qualifications from overseas universities; five from British universities, and another three obtained suitable professional qualifications from British colleges.

Only the two Englishmen and an Australian have English as their first language, but for another 16 it was the official language in which they took their first degree. UMIST offers a one-month crash course in English, and this year only four students were recommended to take further courses in English.

On the question of financial support, 12 students are financed privately, 11 from government agencies of some kind, and four from the British Council. One British student is sponsored by the Electricity Council, and the other jointly by his firm and by the SRC. The United Kingdom students pay £180; the overseas students pay £348.

Professor Colin Canper, who runs the course, does not think that the high proportion of overseas students affects the quality of teaching. It does, however, cause problems with the staff, who, for example, have to spend more time helping students put their dissertations into acceptable written English.

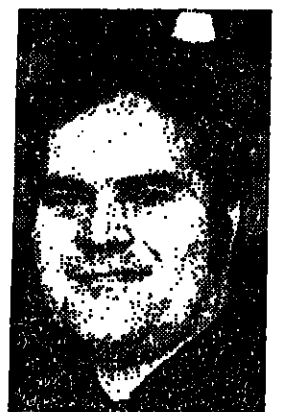
He nevertheless admits to being worried by the lack of interest shown by British students, and by what he sees as the decline of British technology in some areas.

"We have a number of students who are sponsored to come here by SRC grants but they eventually close down not to come. It's usually because they have gained employment and they don't want to give it up, and they are reluctant to give up salaries of £2,500 to come down to £1,000."

Tim Albert visits the controversial engineering course with only two United Kingdom students



Hugh Rudnick, Chilean, aged 28. Born in Santiago, the son of a small businessman. Diploma in electrical engineering from Chile University, and now a lecturer at the Catholic



Keith Forsyth, British, aged 36. Born in London, the son of an accountant. Diploma in technology from Brighton Polytechnic; several years' experience working for the South Eastern Electricity Board and then in Hongkong. Now works for consulting engineers, Binle and Partners, from whom he has been seconded. Financed by SRC grant, topped up by his firm to the normal London salary.

University, to which he will return. Married with his wife and small daughter over here.

Financed by the British Council who pay his fees and an allowance of about £130 a month. He also receives about £150 a month from his uncle in Chile. "At first it was difficult. For example I wasn't used to electricity apart from lighting, and my first bill came to £60."

He learnt his excellent English during a one-year scholarship to high school in the United States.

"I'm learning a lot though I have been disappointed by some of the teachers. I understand that because of the economic situation some of the good ones have left."

He says he sees no objection to raising the overseas students' fees at postgraduate—but not undergraduate—level.

Alfonso Prato, Venezuelan, aged 26. Born in a small town in Venezuela, the son of a small businessman. Single. Diploma in electrical engineering from the University of Carabobo; two years with an electricity



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Qais Alias, Iraqi, aged 26. Born in Baghdad, son of a surveyor. BSc from Baghdad University, then taught at an institute. Single. Financed by

company. Sponsored by the Venezuelan government, he pays his fees and an allowance of £200 a month. Had a two-month course in a language school in a police training school before starting

"I particularly wanted to come to UMIST. It is known as being good, and I have found it useful. I hope to go back to university to do as a project engineer and to teach."

"There are a lot of opportunities there with projects. English people have any incentive to stay they don't see any future coming here. I don't think there's any reason to leave the fees: when I go back I could buy in the future equipment from England. That's one simple but obvious reason. I think it's good relations with England and that right now."

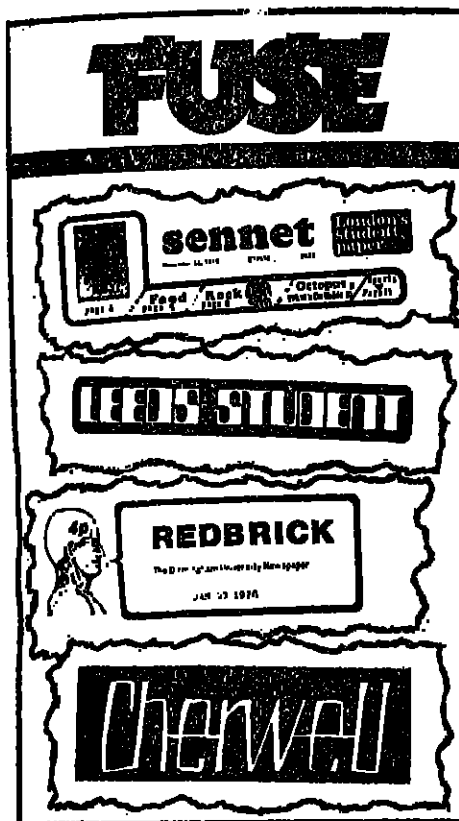
his government, who keep him on full pay and meet tuition fees. Will go back to teach.

Learnt English from primary school, and studied for his degree in English. "I enjoy the course now, but I can't say I'm really enjoying England. Every day it's like the institute back to my rooms studying."

"I'm so interested in electrical power and I know that UMIST is one of the best universities in power engineering."

He said he hoped to get a higher degree in electrical engineering and then work not many courses in the subject in his country.

Examples of the student press.



Identikit papers printed against the odds

It was on my first week on *Varsity*, the now-defunct Cambridge paper, that a well-meaning printer changed the page one headline on the discoverers of DNA from "Two Nobel Scientists" to what he considered the properly spelt version: "Two Noble Scientists". A terrible and unconscious pun that must have made Crick and Watson wonder if it had all been worth while.

Since then I have always thought that the problems of the student press make their big brothers on Fleet Street look competent and generally on top of things. It is hard to produce a Shock Issue on "Why Students Are Wasting Their Time" when it is the work of people who are having to skip lectures and miss out on essays to do it.

Full-time and salaried journalists would be a help, and this is the great asset of *National Student*, the new paper that the NUS is launching on Monday.

Despite all the odds, student papers do manage to come out, and without being financed by the NUS, do decide to give a fair amount of coverage to its activities.

Redbrick of Birmingham, for example, devoted its lead story and three solid inside pages to the recent NUS conference in Scarborough—"Daze at the Seaside"—with a few more NUS stories scattered through its pages to taste.

A casual flick through the student papers shows that not only is there this common subject-matter but that student concerns throughout the country are shared to such an extent that one could produce an identikit paper with a few gaps for names of relevant college and union officials.

"Fifty Dofy University in Accommodation Row" could be anyone's lead story, but comes, in fact, from *Leeds Student*. "Fight on for Grants!" could be read anywhere at any time, but I saw those words in the January 21st issue of London's *Sennet*.

In that same week *Dacus* (only one "c" and no "h" despite their survey on where to go your drinking) of Bristol had a front-page story on "Poly Prices: Shock Rise", while its lead told of "Cuts Campaign at Crossroads". The week before it had also led on finance cutbacks: "Poly Library Hits Staffing Crisis".

Cambridge's *Stop Press* kicks off with the other universal concern: "King's College in Sex Probe" is a searing exposé of a reporter's searing exposé of the sex life (if any) of students. It seems that a lady from a group-up (well, nearly group-up) Sunday paper pounced on any student in sight and demanded full details of the private parts of their university life. *Stop Press* comes out with "gatecrashing of student functions was particularly resented", "much bitterness was aroused" and "succeeded only in making herself unpopular in a remarkably short space of time". An interesting mixture of news and editorializing.

Stop Press is, of course, the descendant

of *Varsity*, which is no longer with us for financial reasons. (In my day *Varsity* was absurdly prosperous, although this had nothing to do with me, rather the opposite.) In my day (if you will forgive my sounding like the Grand Old Man, the Hugh Cudlipp of the Student Press) reporting was intended to be very neutral and impersonal, with the occasional opinion expressed in print editorials.

For this tradition we must now turn to Oxford's *Cherwell*, with its traditional lead on the traditional Oxbridge story of the traditional split in the Labour Club; 10 years ago we used to consider that paper to be far too subjective.

For subjectivity that leaves *Stop Press* well behind, turn to *Fuse* of the North London Polytechnic, with its lead on "Bogged Down by Bureaucracy". This prints a picture of the face of the "faceless bureaucrat responsible" and names the guilty man: "The man at the heart of this mental confusion." He is, apparently, "neaginous" and has adopted "a deliberate policy of obscuration and manipulation", while another official is "that notorious inebriate" whose work is "a fiasco".

Fuse also has a few generous words for the forthcoming NUS newspaper. "With the control of the paper so firmly in the hands of an elite, it is difficult to see it as anything other than a means of perpetuating the present nepotistic order."

And there is something else that *National Student* could ponder with this copy of *Fuse* in mind: the need for a libel lawyer.

Michael Binyon examines the role of the United States' courts in educational change

The American way with rows, reforms and burning issues

Perhaps the greatest single difference between education in America and Europe is the way things are changed. In Europe, reform comes from Government reports, ministerial directives, zealous local administrators or academic research. In America it is, above all else, the result of a court order.

Almost every major reform of the past 10 years has had its origins in legal decisions. Bussing, desegregation, sex discrimination, academic standards, university tenure, student rights, public examinations and even what is taught in schools and universities—the flames of all these burning issues today have been ignited in court.

A key reason why the courts are now more active in education than ever before is that the executive is so weak, Congress so cumbersome and State legislatures so paralyzed by factional interests.

Using the courts to effect educational change goes back to the historic 1954 case of *Brown v Board of Education*. The Supreme Court decision that the concept of "separate but equal" education for Black and White was invalid opened the way to the massive and bitterly contested campaign to desegregate schools and universities in the south.

It led, too, to the civil rights movement, racial riots, student activism, the involvement of the Federal Government in the affairs of individual institutions of learning, bussing, "affirmative action" in the intake of blacks and other minorities into colleges as teachers and students and finally, by analogy, to the tough laws on sex discrimination with the complaints nowadays of reverse discrimination.

At each stage these various issues were pushed forward by individual lawsuits; and indeed, a look at American education today shows that the main issues are still being determined in court.

Bussing? The enforcement of school desegregation in individual cities has recently come up in courts in Detroit, Philadelphia, Wilmington and of course, Boston. Judge Garrity's decision to place the

obstinately segregationist South of a receiver last month led to riots and strikes, and has made bussing a central issue to the current election campaign which no candidate can ignore.

Desegregation: At Christmas the State of Maryland went to court to prevent the Department of Health, Education and Welfare cutting off funds for higher education on grounds that the State had not attempted to desegregate its colleges and universities. But Maryland will have to prove it is taking action when the case comes up in court.

Academic tenure: Eleven university teachers won an important case against Bloomfield, a small New Jersey college, last autumn and established that colleges could not dismiss tenured teachers without proving financial exigency. The Supreme Court recently ruled also that a college had to make proper efforts to find alternative university

work for a teacher in a department it wanted to close down.

Student rights: Students have forced universities to give up the claim to be in loco parentis with a variety of suits—in a recent case the Commonwealth University of Virginia was ordered to grant a group of homosexual students the same recognition as other student groups even though it disapproved of their activities. Some students are now suing universities for not fulfilling their task of teaching properly. So far these suits have been unsuccessful, but they raise the issue of academic accountability.

Religion: The question of organized religion on campus may go to the Supreme Court, after the University of Delaware unsuccessfully tried to get a local court to prevent the Roman Catholic church holding Mass in a student centre on the grounds that this would open the way for all religious sects to claim support and facilities from universities.

School finance: Major court cases in California, New Jersey and other States in 1973 and 1974 attacked the unequal funding of schools by local property taxes, and forced States to reform the system of schools being supported solely by local taxpayers. These cases threaten the long-held principle that school education is the preserve of local communities, and have led to counter-suits from rich districts which do not want their taxes to support poorer schools outside their neighbourhood. This is now the major issue of secondary education.

Curriculum: Suits by parents in rural districts, particularly West Virginia, against textbooks they considered "immoral" or too liberal have led to a sharp curtailment by publishers in innovative material and a return to traditional school textbooks.

Examinations: A successful suit by parents in New Jersey in 1973, claiming the schools had not educated their children properly established the principle that education must be "thorough and efficient". New Jersey is now considering introducing for the first time some kind of State assessment of its schools to ensure standards in each one, and there is talk of establishing for the first time a school leaving examination.

All this has left educationists bewildered. The initiative for reform has passed out of their hands. Significantly, a body that has probably done most to change the past three years is a relatively small Washington-based group called the Lawyers Committee for Civil Rights. With funds from the Government's own National Institute for Education, these liberal lawyers have represented parents and encouraged suits that have resulted in far greater change than all the research findings of the massive National Institute of Education.

An encouragement to litigation in higher education has been the failure of regulations and special programmes issued by Washington.

These new laws have given half-duals all kinds of loopholes in new grounds on which to take or alleged grievances to court.

The main sufferers have been universities. They have been overwhelmed by lawsuits, and have found that practices formerly accepted by all members of the college and local community are now technically illegal.

Moreover, it is up to them to ensure that they comply with any new federal regulation, or with private or Federal court action.

More and more therefore are appointing and relying on their own lawyers for guidance: the National Association of College and University attorneys says it has never been so busy, nor had to offer advice to universities on so many different issues.

Mr Peter Wolff, director of the national association, said one major difficulty was that different departments of the Government made different regulations: those intended for factories, for example, were often inappropriately also applied to universities.

California has just seen an example of this, when a regulation on "industrial safety" obliged employers to afford employees adequate protection in their jobs. Taken to mean that for campus guards in universities adequate protection meant guns.

The Chancellor of the California University system therefore was obliged to order that all guards were to be armed with guns—much to the anger of students and at some of the universities.

But in a country where so many competing claims and such insistence on democratic decision-making and often paralytic delay by elected Governments and executives, in a post-Watergate climate where the official word is not believed until tested in court, where there is no generally accepted pattern, the law is inevitably the defining agent. Chaos and inertia. The judge writes the knotted tape is the real reform.

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Mr Dominic O'Loighaile
Secretary-Department of Education
Marlborough Street
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The slings and arrows of dramatic fortune

Bernard Crick reviews the two rival *Hamlets* of the National Theatre Company and the Royal Shakespeare Company

At first glance, comparisons are irrelevant as well as odious. They don't appear to be fighting in the same class. The National Theatre's *Hamlet* is a heavyweight, full-scale, new production, almost operatic in conception; Peter Hall directing a cast of nearly fifty in elaborate, Jacobean costume. The Royal Shakespeare Company's *Hamlet* is a lightweight, cut-down modern dress version for 14 doubling and re-doubling actors, almost a concert version, transferred from "The Other Place" at Stratford, in the new Round House "Downstairs", which seats about 150 people in painful unranked seats and benches, and it is directed, says the duplicated programme, *re: directed* rather, by Buzz Goodbody.

No epitaph could be more fitting. He chose to take the Jacobean *Hamlet*, which, after all, the *Hamlet* always turned back; but "Buzz, here come the players", the actors remember her with quietude and wit. For her *Hamlet* is quite as good, indeed, as great, was her famous cut-down *Levi*, accused by less cut down than *Levi*, but just as metaphysical and intense, both brooding and razor sharp upon the meaning of every word—*Levi* so narrowing, intelligent, almost unbearable; but *Hamlet*, well, even the kind may like the ending of the play—she went—in one perhaps part-accidental or part-wilful holocaust, yet the intelligence redeems it all—what a thing of wonder is this man!

Buzz Goodbody, had she lived, would have been the true heir of Peter Hall and Peter Brook from their old RSC days, only somehow he was on a smaller, but therefore an even more intense scale as the featherweight boxer has indeed far more art, skill and grace than the famous, aging and over-financed heavyweights. She gets from her cast the typical RSC concentration on the meaning of every line, eight little things come to life, quite apart from the Prince and Claudius.

The scene, just for one instance, where Polonius instructs Reynaldo to spy upon his son, Laertes, is usually put through. Only side. On *Polonius*: You shall do marvellous wisely, good Reynaldo, before you visit him, to make inquires of his behaviour. Reynaldo: My lord, I did intend it. The National Theatre actor says the line flatly, but the RSC actor gives it with a deprecatory, rocky little half-sneer, as if to say, "Don't tell me how to suck eggs. I've learned it all from the books and let me take over." He is a thrusting junior executive, an arrogant company creep. Of course it is there: what other meaning can the scene have? This big fish, the little fish, but every dog must have his day. Ambition sours and destroys every human relationship at court.

The modern dress is neither distracting nor gimmick. The king, George Baker, wears a marvellously over-well-cut chairman of the board suit, perhaps a little bit like Prince Rainier, as Gertrude is, bless my soul, touching on the Mrs Simpson. He is so rational and commanding that if the state of Denmark is to avoid inflation and industrial anarchy, it must be him at the helm, however he got there. Where as *Hamlet* is well, the tragedy of the non-political humanist and intellectual, so intelligent, so much more refined and profound, and could a man of such volatile and indecisiveness, a bit manic-depressive even, be king, so trusted with the cure of the state?

Ben Kingsley plays *Hamlet* as reluctant mad, which is too dangerous a game for him to play, but playing as it drives him into madness, able to recover but each time with diminishing coherence; and if his energy grows throughout the play, it loses its point. Ben Kingsley finds the prince, the humane, the courtier unsure (like *Hamlet*) what he is doing there at all; but *Hamlet* the man lets us hear every word of his soliloquies, every word of his thought over, as if thought

really is decisive. "To be or not to be". We really wonder what conclusion he (and we) finally will reach. But when he waxes Ophelia off him, "I'm very proud, revengeful and ambitious", that is his sane side, as when he complains that Claudius "stood between the election and my hopes". Part of him would rather be back with Horatio in the seminars of Wittenberg, but part is indeed ambitious, caught up in the court, quite apart from motives of filial vengeance. A great reading and acting of the part.

A Robert Finnerley *Hamlet* is, on the other hand, a quite straightforward Fortinbras. The subtle ear doth writhe and wince. When Fortinbras doth play the Prince, *Hamlet* has plainly had a bad fall or a sudden shock, for he does go ranting on in a most turbulent and disturbed way, but nothing that disturbed *Hamlet* or Lady Macbeth's doctor could cure. Why? Why? Why? "I was not born to play the Prince..." That every word actor should try to try is no surprise, George Robley longed to play Alce Guineas did. Why should Peter Hall have let him? Can you imagine a *Hamlet* without an intense and complicated intelligence, one without psychological predicament and also wit, and one who is without a clue as to when he is made of foliage and moss, one who is all hand-saw and no hawk?

But the mystery goes deeper. *Hamlet*, for all his sound and fury, is hardly the centre of Peter Hall's production. What is at stake is the state of Denmark itself. Now this is worth stressing, and Denis Quilley's tremendously powerful, almost deadpan Claudius (but the lower lip trembles for the nonce) gives this reading great support. It is presented as an historical tale, closer to the histories than to Lear. The court dominates all things.

Well, the court is the context, certainly; and the full and completely uncut text does make clear the politics of the matter. But the play is not just about that. Yet Hall narrows it to this one point. The stage itself is made shallow by a wall right across it with a single central door, so all the characters and extras, more extra-actively than usual, for years, ten players, twelve visitors, eight councillors with grey beards, all line in a shallow semicircle and watch. All the old mobility that went together with the speaking of the play is lost. In Hall's RSC days it was deliberately cut aside. On *Polonius*: You shall do marvellous wisely, good Reynaldo, before you visit him, to make inquires of his behaviour. Reynaldo: My lord, I did intend it. The National Theatre actor says the line flatly, but the RSC actor gives it with a deprecatory, rocky little half-sneer, as if to say, "Don't tell me how to suck eggs. I've learned it all from the books and let me take over." He is a thrusting junior executive, an arrogant company creep. Of course it is there: what other meaning can the scene have? This big fish, the little fish, but every dog must have his day. Ambition sours and destroys every human relationship at court.

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The author is professor of politics at Birkbeck College, London.

Why it could largely be a matter of economics

Gareth Williams looks at the various factors behind current trends in demand for higher education

We are now over half-way through the present decade and the 1970s trend in the demand for higher education is making itself apparent to even the most cautious trend-watchers. In short, demand by potential students is not rising so fast as appeared likely at the beginning of the decade.

So far at least, the main reason for the downward revisions in planned expenditure on higher education has been the fall in the number of customers rather than a deprivation of the resources necessary to provide a satisfactory service.

In 1963 the Robbins Committee urged that "courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so."

It has been the basis of government policy towards higher education ever since and, so far as an outsider can judge, speeches about manpower planning notwithstanding, remains so today.

As in Robbins, the distribution of students within higher education has been decided partly by manpower considerations, teacher training and medical education being the obvious examples—but the overall total has been and still is provided on the basis of estimates of the demand for places by qualified potential leavers, adjusted to allow for increasing numbers of adult and foreign students.

We can monitor the demand for higher education in relation to the Robbins criteria by observing changes in four indicators (although this is not to say that they are the only important indicators or that they tell us all we want to know). The four indicators are: the size of the 18-year-old age group, the proportion of the age group staying on in full-time education beyond the legal minimum school leaving age, the proportion of young people obtaining one or more A level passes in England and Wales or three "Highers" in Scotland, and the proportion of these "qualified young people" who actually enter higher education. We can call these the "relevant population", the "staying on rate", the "qualification rate", and the "willingness rate".

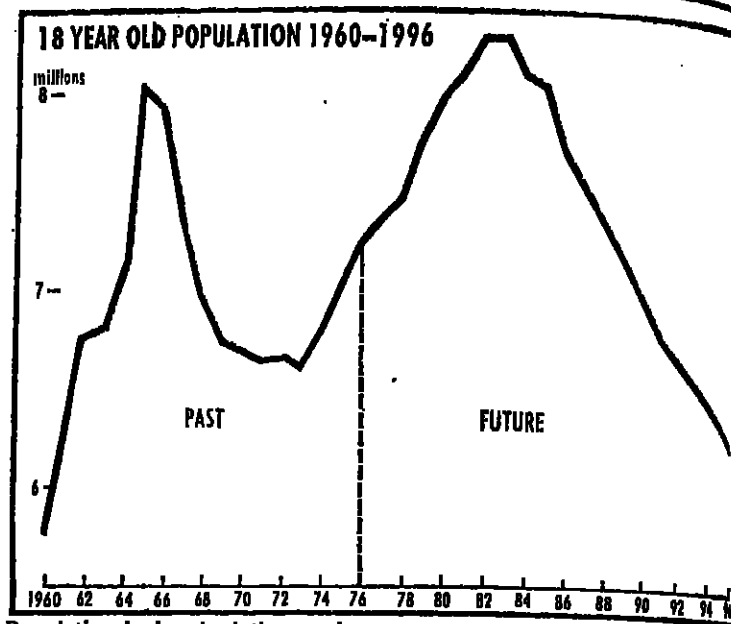
The diagram above shows the population from whom the majority of the entrants to higher education will be drawn for the next quarter of a century. At present we are on a rising trend—not quite as steep as that of the early 1960s, but steep nevertheless.

From 1973 to 1982 the average annual rate of growth of the potential pool of applicants for higher education is about 2.5 per cent per year. If the same proportion of young people qualified and wanted to go to university in 1972, there would be 25 per cent more places to accommodate them.

After that the great decline of the 1980s will begin, although whether it means an actual decline in enrolment will depend of course upon the proportion of young people seeking higher education in the "relevant population" from 1983 to 1989 accompanied the most rapid expansion of higher education in history.

From the mid-1990s onwards it is probable that a further "relevant population" will be experienced as the children of adults themselves reach higher education age. That, however, is almost pure speculation.

Before 1973/74 it was convenient to consider the "staying on rate" as being the proportion of 16-year-olds who stayed on in education. It is now, however, consistently for at least 10 years up to



Population in hundred thousands.

1973 after which there was a small but distinct fall.

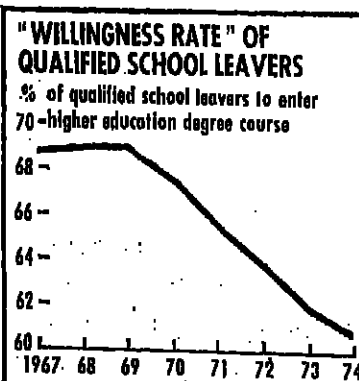
The 1974 and subsequent figures for this are not comparable because of the raising of the school leaving age. Although estimates of the equivalent voluntary staying on rates can be made, they are not very reliable. All that can be said is that the downward trend almost certainly continued among the 1974 school leavers.

A supplementary indicator on which we have rather more information is the proportion of 16-year-olds embarking on A level courses. The upward growth of this indicator began to slow down in 1970, stopped in 1972 and in 1973 went into reverse.

A third indicator is the "qualification rate". We have a considerably longer series of this indicator than the others. The trend was almost linear between 1954 and 1964 thus accounting for the linear projection of the Robbins Committee.

Robbins immediately after the trend started to rise at an accelerating rate and by 1970 was 33 per cent above the Robbins projection. It is hardly surprising that when the Department of Education and Science statisticians reworked the Robbins figures in *Education Planning Paper No 2* in 1969/70 they revised upwards very considerably the Robbins forecasts.

Immediately, however, as if deliberately trying to cause embarrassment to educational planners,



school children showed a weakening propensity to take A levels. By 1974 20 per cent fewer were qualified for higher education than the 1970 plan had projected.

This slackening trend was becoming apparent by 1972 and the targets of the White Paper, *A Framework for Expansion*, clearly took into account though the explicit assumptions on which these targets were based have never been published. Subsequent planning targets published by press leak and parliamentary answer have revised the projection still further downwards.

One apparently technical point we should note is the timing of the downturn in all these indicators. In the normal course of events we should expect a change in the 18-month lag by a corresponding change in the "qualification rate". This is because the population from which the "A level" school leavers are drawn must have stayed on beyond the minimum school leaving age 18 months previously. In fact the downturn in the qualification rate occurred in 1971 and later in 1972.

We must assume that the 1970s school leavers in the early 1970s were responding to something other than earlier staying on rates. If we are concerned with the decline in the "willingness rate" rather than merely the "staying on rate", we are concerned with the decline in the "willingness rate" rather than merely the "staying on rate".

progress this fact is significant. The plot thickens when we examine the fourth indicator—the willingness rate. One convenient way of expressing this is the percentage of school leavers with one or more A level passes in GCE intending to embark on degree courses. The development of this index since 1967 is shown in the diagram below, showing that it declined since 1969.

We have, then, the following chronological chain of events: 1969 "willingness rate" starts to decline; 1971 "qualification rate" apparently starts to decline; if these three factors are multiplied together and current trends are projected till 1981, it more than accounts for all the downward trends in the planning and targets for higher education for 1981.

If we assume that "qualification rates" and "willingness rates" remain at their present levels and do not decline further, this would result in about 550,000 full-time students in 1981/2 compared with 480,000 in 1974.

It is more interesting, however, and more useful for policy, to consider why this downward trend in the demand for higher education has occurred. If we understand what has been happening, we may be able to begin to make realistic guesses about when the current trend is likely to change or indeed how it can be changed. It comes as an object of policy that the chain of events described above must cast doubt on simplistic claims that relative to the population, the demand for higher education has reached some sort of logical limit, or that changes in the structure of secondary education have resulted in fewer academically minded sixth-formers.

The slackening demand point with those who were perfectly qualified to enter higher education. They wanted to, it spread itself to other sixth-formers, and not only has it affected the staying on rates, the most likely explanation of such trends is undoubtedly the widespread publicity given to adult employment in the decade.

There is indeed quite a lot of casual evidence from press reports and such like that the three indicators of demand, the "staying on rate", the "qualification rate", and the "willingness rate" have all shown an upward turn in the last few years. This will be confirmed only when the statistics become available. If borne out it will provide support for the claim that demand for higher education is to a large extent the result of economic circumstances.

Obviously exponential growth for that matter any other upward growth in percentages must end at some point; but with only a small amount of growth in the percentage of our young people entering higher education, it is not surprising that we are so concerned with the decline in the "willingness rate" rather than merely the "staying on rate".

The author is professor of social planning at Lancaster University.

Science education: a revolution that has ended in turmoil?

The aims of science education in our schools have traditionally focused on producing a small, but ever increasing, number of able boys and girls who would receive degrees in science and technology as a step towards professional careers in pure or applied science.

School science has thus by tradition been tightly interlocked with university science, with one seen essentially as a preparation for the other, and both having strong vocational and professional objectives. The whole process has been essentially concerned with the maintenance of science teaching.

The mechanism whereby this interlocking of objectives—and therefore of curriculum content and teaching methods—was maintained was in part due to the influential university science teachers on the content and administration of O level and A level examinations, and partly to the readiness with which many sixth-form science teachers accepted a dependent position in the educational process.

The major characteristic of the traditional pattern, however, was the certainty with which teachers on either side of the 18-plus fence could view and respect each other. The school teacher knew what was expected of him, and what the product of his endeavours would be when he, or she, went "up". The university teacher, when viewing that product, knew that it had been made under reasonable assumptions, and that training—what content had been taught and to what level of sophistication.

The pupil, when considering the transition from school to university, could face the change in the confidence that both sides had in each other. Teachers were in reasonable agreement with respect to aims and outcomes. As a result sound guidance could be given—and accepted—and transfer occurred with the minimum of questioning and about the nature of the change.

In the past decade and a half, significant changes have occurred in our schools which force us to re-examine our understanding of the interface between schools and higher education, and perhaps to make explicit the different assumptions that can now be made on the schools' side. In particular, we need to explore changes in the nature of the school science, changes in the nature of the relationship between secondary and tertiary education, and changes in the systems of examining school science.

We also need to explore the profound effects that change has had on the ability of the 18-plus fence to see those on the other side with any real perception of the problems that exist there. An inability to compre-

Dick West discusses recent changes in school science teaching, and their implications for universities

hend the problems of others has perhaps created an area of uncertainty through which many young people do not feel inclined to pass.

During the late 1950s and early 1960s science teachers felt—or were encouraged to feel—that the science they were then teaching was out of date in terms of both content and method. The overt reliance on classical science supported by traditional textbooks was strongly criticized by leading scientists and teachers.

After early initiatives by the Science Masters Association (now the Association for Science Education), the Nuffield Science Teaching Project was established, and a steady stream of curriculum proposals were published which provided detailed guidance for the planning of new science teaching programmes for pupils aged 5-18.

Concurrent with this and other programmes of curriculum development we have witnessed radical changes in the structure of higher education, and the emergence of non-selective secondary education as a norm rather than an exception.

The CATs went after Robbins: new universities were developed during the white heat of Wilsonian technocracy and science, and grammar schools absorbed secondary modern schools to become comprehensive in intake, if not in ideology; the campaign to abolish the direct grant system slowly became a reality; and, finally, James and Thatcher combined forces to ensure that the institutions which trained many of our science teachers would become higher institutions that, by and large, will not be seen.

General, what in curriculum and organizational terms could have been a revolution, became turmoil largely because the changes in the different levels of the educational system were not guided by any agreed vision of a reality, and not were the effects of changes in one part of the system on work in the other part realistically talked through.

Opportunism, the Treasury sword, the Department's dog, and sheer political expediency have created a debate on the relationship between education, science and society. Throughout the last decade three important groups have emerged, each with uncomprehending eyes mistaking each other's motives and motives, abdicating responsibility and being accountable to no one.

In the context of science education, university and polytechnic lecturers, school science teachers, and science curriculum developers inestinctively recruited from each other, but failed to recognize any previous incarnation.

The university teacher or school teacher working in the temporary system of, say, a Nuffield project team became a curriculum developer *per se* and a defender of the faith, he—or she—applied, or misapplied, it as product and did not act as a true mediator between the schools and the universities. He did not, or possibly was not allowed to, relate changes he was proposing in one system of change to the consequences should have been made in the other.

Each level of education remained hermetically sealed from the other. The schools could take up, or leave, the fruits of the individual's labours; they could apply, or misapply, it at varying levels of understanding; proposals were embraced, or omitted, or eliminated.

The institutions of higher education, on the other hand, developed new examination schemes and new courses, but where do these changes in the school system and played the student number game according to the old rules, and on the old assumptions of the purpose and nature of secondary education?

As a result, students entering a science department in a university can now have a widely heterogeneous background of past experience. Even a group of students with good A level in say mathematics, physics and chemistry will differ radically in terms of the content they have covered; the quantity of content they have been exposed to; and the methods by which they have learned it.

Thus the faculty dean who homogenizes this heterogeneous crowd into a common preliminary course is failing to acknowledge that his teaching is the development of the individual student's intellect to its full capacity, has become at last the aim of others.

School science is slowly becoming an end rather than a means, and it is therefore impossible to see one and is not incompatible with another. This requires all concerned with science teaching to develop anew a confidence in each other's skills, and an appreciation of each other's problems.

One of the fundamental consequences of recent changes in the educational system is that school science teachers can now hold varying views about the purpose of their teaching. The modern secondary school demands more of the science teacher than merely the satisfaction of the academic needs of a small group of pupils, but it makes that demand also.

Education through science is slowly replacing education in science, but care must be taken that this does not lead to education in



School biology: can universities cope with the changes now taking place?

spite of science. At the same time teachers in higher education faced with students who are different, and in important respects less well prepared for traditional courses, must examine rather than ignore these differences, and talk with their colleagues in secondary education about them.

In short, differences in attitudes and objectives must become explicit and public in order for them to be debated. The school teacher stares ambivalently nowadays at his university counterpart. Senates accept new examination schemes and new courses, but where do these changes in the school system and played the student number game according to the old rules, and on the old assumptions of the purpose and nature of secondary education?

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or environmentally-generated abilities; a common core activity that might lead to a generation of young people who accept willingly that science, in both its methods and culture, has something valid to say to them.

Secondly, science teachers are beginning to develop the view that school science must not become divorced from the remainder of the curriculum, but must be seen to relate to the social, economic and political problems of life in a technological society; an applied science if you wish, but a science applied to the social problems of our time.

Thirdly, a few teachers are beginning to develop the view that science education are more revolutionary and far-reaching in their implications than the earlier developments in curriculum reform which simply replaced the normal concepts of classical science by some of the normal concepts of modern science. Here we find ourselves in a new paradigm whose implications have the potential to reap havoc in our universities and polytechnics and create a counter-culture that could ultimately be based in the arts rather than the sciences.

As a former school teacher in a truly comprehensive school who has lived through the educational arguments for science in the common curriculum, it is with these new developments that my sympathies lie. But sympathies are meaningless without informed discussion that leads to action.

The author is a member of the editorial board of the *Journal of Science Education*, and is chairman of the research committee of the Association for Science Education.

How polytechnics could make an arts education 'relevant'

Polytechnics have been disappointingly slow to produce any challenge to the orthodox provision of arts education in the universities. Rather than developing arts degrees which bear the distinctive imprint of the widely proclaimed polytechnic tradition of relevance and social purpose, polytechnics have in general been content to follow the university models of single subject, and the related general arts type of degree.

While acknowledging the powerful weight of feeling against departures from the single-subject degree, it is still surprising that there should have been such a failure of imagination, particularly since expansion in polytechnics is currently faster than in the arts area.

The difficulties in combining growth with a reassessment of the curriculum lie in the fact that the traditional course structures to those prescribed by the single-subject tradition, in which the aims of a degree are determined with little direct social and vocational considerations, from polytechnics, however, whether increasingly expect to enter professions within which they will have to face a continually widening range of problems and duties. Frequently there are also problems of job re-definition.

Peter Brunson suggests a new multidisciplinary model for arts courses

ity which is a main aim of the course. Syllabuses are designed to prevent too much concentration; a student selecting literature, modern history, and philosophy, for example, with syllabuses emphasizing respectively European literature, European history and ethics, aesthetics and politics, should not necessarily become academically schizophrenic.

The third and final stage of the course, the interdisciplinary stage, has two purposes: to demonstrate the practical value of academic study in understanding and interpreting modern society; and to introduce material of specific vocational relevance.

These aims involve the provision of a number of problem-centred topics, a device instinctively distrustful by many arts academics. However, a carefully chosen problem, such as the business ethic in the modern world, will both draw on and justify the disciplines (in this case philosophy, literature and

economics), which may have been studied at the second stage. The areas of interest from which similar issues could be selected are also those areas of activity where modern graduates are most likely to find employment. If carefully devised, therefore, such interdisciplinary studies would encourage an attitude for general social and cultural analysis in a way that offers direct insight into the character of certain professions, and into the problems of job definition and social justification which they face.

The above programme does not exclude the opportunity established at the second stage, of traditional "in depth" study of a particular subject. The interdisciplinary aspect of the course need not be enormous time-consuming, and should reinforce an individual subject selected by the student for specialist study.

There is also a difference between advocating high academic standards and insisting that they can only be achieved by one way or another. By demonstrating that there is no real incompatibility between academic standards and social relevance in the arts—any more than in science, medicine, law or engineering—polytechnics could put a distinctive seal on their own success.

The author is principal lecturer in humanities at the Polytechnic of Wales.



NORTH AMERICAN NEWS
MICHAEL BINYON reports
from Washington

Rutgers set to sack 1,000 staff

The Governor of New Jersey has presented a budget that his higher education so severely that several institutions in the State fear they may not be able to survive. The cuts at Rutgers, the State university, go far beyond anything the City University of New York has had to endure.

The university will lose 20 per cent of its State aid this coming year. It will have to cut student intake by the equivalent of 5,000 full-time students, sack up to 1,000 lecturers and other staff and curtail a whole range of academic courses. It is the most disastrous cutback in the university's long history.

Dr Edward Bloustein, Rutgers' President, called an emergency meeting of the University Assembly the day after the budget. This assembly, which meets only in emergencies, was open to all teachers, staff and students.

President Bloustein outlined what the budget would do to Rutgers, to go up by 48 per cent to over \$1,000, on top of a recent increase in board and lodging.

In one year, undergraduates have had expense increases of \$500. Rutgers' President Bloustein said, "we now one of the most expensive State universities in America; and with the drastic cut in intake, it would be one of the most exclusive. He called the budget "an absolute disaster".

Rutgers' main difficulty is that New Jersey is bankrupt and in an almost worse financial mess than neighbouring New York. It faced a massive debt of \$891m this year and was forced to make heavy cuts in every field. The university budget will be cut by \$12m, from \$50m to \$38m.

Other universities and colleges in the State will be equally hard hit. The Agricultural Experiment Station will lose 30 per cent of its budget—a cut of \$3m out of a total of \$10m.

The chances that Rutgers will be able to convince the New Jersey legislature to restore some of the money are minimal. New Jersey is the largest State in America that has no income tax, and as a result

Big increase in collective bargaining forecast

No amount of wishful thinking would reverse the trend towards collective bargaining in universities, said Mr Fred Crossland of the Ford Foundation last week. Unionization was the inevitable result of the changing structure of universities, he said.

Writing in this month's issue of *Change* magazine, Mr Crossland said it was quite probable that college collective bargaining, which began only 10 years ago, would soon be the norm in American higher education.

That result would be to tilt the balance of power on campus away from presidents, chancellors and deans. They would become mere administrators, rather than executives. Instead of setting basic policy, their job would be to carry out the terms of union contracts.

The gainers in this shift of power would be the teaching staff—not as individuals but as a body. Indeed the individual professor in the future is likely to find himself under stricter discipline in a union than today's college teacher who ordi-

It cannot pay for the social services its citizens demand.

But the feeling against introducing an income tax runs so high that last year hardly any of those who proposed a tax were re-elected to the legislature; and inflation has increased the local sales tax cannot keep up with State expenditure.

Rutgers gave advance notice to 94 second-year and 121 first-year teachers in the autumn that they would have to be sacked if the budget was as bad as the university feared.

It has turned out to be much worse. The clerical staff have threatened to strike, and the local branch of the American Federation of Teachers is also considering strike action if other talks fail.

The cut of 5,000 students at the university would mean that virtually no transfer students will be accepted next year, and first-year intake will be considerably reduced leading to a great imbalance in the student body.

Rutgers, founded in 1766, is co-ordinating the fight against the budget by all the other institutions in New Jersey that are similarly hit. Last week the presidents of the college of medicine and dentistry and several community colleges denounced the cuts as "devastating". Rutgers State, Trenton State and Ramapo colleges have also had to send termination notices to teachers.

Mr Ralph Dungan, the Chancellor of Higher Education for New Jersey, acknowledged the level of support for the system was deplorable. Next year's budget, for higher education will be \$270m compared with \$298m this current year, and \$388m recommended by the Board of Higher Education. There will have to be 26,500 fewer students in the whole system than there are now.

Mr Dungan said he had tried to ensure that the cuts were evenly spread, and that no institution would actually have to close. He said that while colleges would have to cut enrolments, they should ensure they still served the needs of minority students and those from low income groups.

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New academic year aims at flexibility for all

Considerable publicity is being given at the moment to a novel scheme at the University of Wisconsin-Oshkosh to combat falling enrolment and academic stagnation by rearranging the academic calendar. A booklet describing the scheme has just been published by the American Association of State Universities and Colleges. So far it has been a great success.

The new calendar, first introduced last summer, splits the traditional 17-week semester (there are normally two of these and an eight-week summer course at American universities) into two seven-week sessions plus a three-week session. The summer course is divided into two four-week sessions.

The idea is that courses can be arranged into any convenient length—three, four, seven or 14 weeks. This gives teachers considerable flexibility, and allows students to take several concentrated courses one after the other, instead of following three or four at the same time for the whole 17 weeks.

Lecturers agreed to teach the more intensive new calendar only a small salary rise. The result was that Oshkosh can now offer many more short courses for part-time and adult students—one of the fastest growing sectors in today's student population—and can offer ordinary undergraduates the chance to enter and leave the university, even temporarily, at many more points. As Oshkosh says, "stop-out" need not now necessarily equal "drop-out".

The new calendar can be used in any combination. The three-week course can be used as a revision of the previous 14 weeks, or it can make room for a crash course in a new field. The short units mean that more courses can be held "on location" away from the campus in field studies or internships.

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The bright can take more courses in a shorter space of time, and graduates can repeat them again soon rather than having to wait for the next semester. The calendar also encourages self-paced courses, so that students can plan a schedule that best suits them.

The advantage to the lecturers is that they can fit their teaching into concentrated blocks, leaving time free for research or curriculum development. And, vitally important, lecturers can fit their many committee membership duties into the slots that least disturb their teaching.

In return for this, they will generally have to work rather harder during the 14-week sessions. Those that are required to teach in the two summer sessions can take their vacation instead during a suitable seven-week session.

If the new calendar is taken as a two-year unit, teachers can pace themselves so that vacation periods can be combined to form mini-substitutes.

As a result of the new flexibility and the agreement by lecturers to accept lower salary levels for extra teaching, Oshkosh has been able to create a yearly fund of \$200,000 for development.

Part of this will be used to support staff research outside the regular contractual period. Some will be distributed to the university's colleges for curriculum development and to support inter-college programmes, including a special course for lecturers, where teachers will offer courses to their colleagues.

The Association of State Universities and Colleges, to which all the major large universities in America belong, is now recommending its proposals to its members even though student numbers began to rise again significantly this year.

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Counsellors fail to agree to differ

A new university Department of Human Relations may be partly closed down because counsellors among its staff are so bad that the department is unable to function properly.

Next week the Senate of the University of Waterloo, Ontario, will vote whether to accept the troubled department and what to do with it. The decision has already been postponed for a year.

The Department of Human Relations and Counselling Studies was established in 1972, evolving from the counselling division of the Department of Psychology. Office graduate courses at first, it received a \$300,000 grant from the Canadian Foundation of Canada to run an undergraduate course. It now has six full-time and seven part-time lecturers.

From the outset, however, the department was troubled by difficult conceptions of what it was supposed to do. The chairman of the special investigation, said the PhD programme was "very tenuous" and the undergraduate course "loosely structured".

The arts committee also approved the new courses were troubled by the lack of a central vision and the difference between "human relations" and what was being taught in other departments.

The greatest obstacle to achieving the department's goals was the original vision among the lecturers. The investigators' report said: "Disension which arose within the department went far beyond anything that might be considered normal. Differences became personal and bitter. The department was literally unable to function."

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South Africa

Africans face medical school shutback

from Sue Reid

JOHANNESBURG

The Government has staged an unexpected about-turn over the immediate future of the Natal University Medical School which has been ordered to phase out medical education for Africans.

The school in Durban, which caters for Black students, was told in December not to admit any more first-year African students and to prepare to phase out second-year African students from 1978.

But now, after criticism of the ruling from some quarters, Dr Piet Koorhof, the new Minister of National Education, has announced that first-year African students will be admitted for this year at least.

The medical school—the only one in South Africa exclusively offering places to African, Asian and Coloured students—is unique in that it is attached to the White Natal University, a situation which is out of line with the Government's apartheid in education policy.

When the decision to phase out African students was made, the Cabinet argued that a new R30m (£20m) medical university for Africans, due to be opened in Pretoria in 1978, would meet student demand.

But academics and medicals protested on the grounds that both the medical schools would be needed to fulfil African student requirements. Professor John Reid, dean of the Natal Medical School, said the school had already been turned away from his school.

And he said he did not believe that the new announcement heralded any real change in Government plans for the medical school. It was only a "minor administrative alteration". It would, however, allow more time for negotiations with the Government.

So while the Natal Medical School has won a year's reprieve for its first-year African students, the Government has not ruled out plans to remove Black students will still go ahead.

With the phasing out programme under way the Government hopes to

set up medical schools within the Indian and Coloured universities in South Africa and then bring White students into the Natal school.

This is likely to put the future of Black academics and medicals there in jeopardy and has already heightened demands for the school to remain a centre for Black medical education.

Professor P. V. Tobias, head of the department of anatomy at Witwatersrand University, speaking at the annual congress of the National Union of South African Students last week, said the Government's plan "once again flouts the freedom of universities to admit students as they wish on the grounds of academic merit".

Each year South African graduates about 145 White doctors per million Whites, about 71 Asian doctors per million Asians and just one African doctor per million Africans. In 1972 there was just one African doctor in the country for every 44,000 Africans compared with one White doctor per 400 Whites.

The South African Sociological Association, representing most practising social scientists in the country, has split on the colour bar issue.

The association's constitution as it stands limits its membership to "Europeans" only. At its annual meeting in Johannesburg a motion that this provision should be scrapped and that membership should be open to persons of all races was defeated.

Five academics, all Afrikaans-speaking, resigned and decided to establish a new non-racial organisation.

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Malta

Union steps up drive for grants

from David Attard

VALETTA

The Students' Representative Council, the Maltese University student union, has just published a report on the introduction of a grants system in Malta. The number of students presently attending courses at the Royal University of Malta is about 780. Next year the number is expected to increase to about 1,000.

The report, part of a campaign being organized by the SRC with the help of other youth organizations in Malta to introduce a grants system, argues that students need at least £200 (about £225) a year. It proposes that grants should be means-tested: a student whose family income is under £M1,000 should get the whole grant of £M200 and all students should be entitled to a minimum grant of £M50. The report recommends that the grant should be increased yearly to take into account rises in the cost of living.

Three main reasons are given for the need of a grants system: some parents just cannot afford the cost of a university education; a son's or daughter's years at university would represent an untimely burden on the parents; and a student's independence is an essential part of tertiary education.

The report envisages the setting up of a Grants Committee by the Government, which would be responsible for giving awards. It would have discretionary powers to discuss each case on its own merits and to enforce parental contributions where they are unjustly withheld.

After studying systems of financing tertiary education in other countries (including Australia, France, the Soviet Union, the United States and Britain), the report recommends that students should be granted loans to students as an integral part of a grants system. The main objection is that it would represent an untimely burden on the parents; and a student's independence is an essential part of tertiary education.

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LETTERS TO THE EDITOR

Adult education and the Left

from Mr H. D. Hughes

Sir—It is a pity that Ivor Crewe spoils an otherwise excellent article (THES, January 30) by including the usual cheap and outdated cliché about "middle-class mums" in the WEA.

Many "middle-class mums" are themselves relatively educationally deprived and those who are not are actively involved in helping others, e.g. as volunteers in the adult literacy scheme.

But Mr Crewe might like to visit some of the new industrial branches of the WEA, on the day release schemes for shop stewards, on the pilot schemes in decayed city centres, to inform himself of the response the movement is making to the challenge of the Russell report to tackle educational deprivation.

That being said, it is true that the Department of Education and Science (under all post-war governments) has been remarkably slow to recognize the importance of adult education. The WEA has now convened a group, drawn from all sectors of the adult education world, old and new, to press for the setting up of a national development council to remedy this.

Practical expression of Tawney's principles are eagerly awaited from Fred Mulley and Gerry Fowler. Yours sincerely,

H. D. HUGHES, President, Workers' Educational Association, Upper Berkeley Street, London, W1.

from Mr Eric Robinson

Sir—Ivor Crewe nicely illustrates a point I made several months ago in your columns when he asserts that nobody in the Labour movement has attempted a rethink of its traditional commitment to higher education.

He can say this only because he

obviously does not consider anything but the adult education world, old and new, to press for the setting up of a national development council to remedy this.

I estimate that of the 34 or so universities which have institutionalized their extramural functions (under a variety of names, like extramural department or adult education department). Not more than about a quarter of these are seriously involved in adult education per se. And there cannot be more than three universities of whom it can be said that they "concentrate their academic, as distinct from their organizational expertise, on the study of adult education".

One of the troubles is nomenclature. Some extramural departments even though continuing solely or mainly as extramural departments, have become "departments of adult education". One suspects this is to obtain greater respectability.

Yours faithfully, PETER WASSILL, Priestfield Road, Edinburgh.

Design for disaster

from Mr Alan Brickwood

Sir—It was disturbing to see in Mr Ashwin's recent article (THES, January 23), the reiteration of an obsolete, exclusive definition of the roles of industrial design and engineering design. Both in teaching and practice the "split" is smaller than he imagines.

It is a great pity that he failed to include some reference to the many institutions and parties actively and enthusiastically working together as teachers of industrial design and engineering design for the recognized benefits of good ergonomic, aesthetic and technical design for society.

Our own course, for example, aims to equip the graduates with a training in design skills and abilities that will enable them to make a meaningful contribution within the design team of any organization.

The course includes an engineering lecture programme occupying about 20 per cent, coupled to a number of integrative design projects carried out with specialist engineering departments of the polytechnic.

This external contribution is reciprocated by our staff in regular service lecturing on a large number of engineering courses. We find these links to be mutually advantageous. It is by working together in this way that the "dangerous split" referred to in the article can be bridged.

Yours faithfully, ALAN BRICKWOOD, Department of Industrial Design, Lincolshire Polytechnic, Coventry.

from Mr Martin Woltersen

Sir—In his article, Clive Ashwin identifies a very serious problem area in art and design education, that of the distance which has formed up between design and design in an industrial context and "industrial design", teaching in the further education sector.

He makes reference to engineering teaching in the post-school sector as being rooted in the physical sciences and mathematics almost as if that were a bad thing. In the school sector "engineering" tends to be taught as a practical subject (the production of items/prototypes) of characteristically low status.

This activity remains quite unrelated to any physical science or mathematical teaching. At least engineering teaching in the post-school sector is not. It is a pity that

ledges its debt to theoretical research and the language of that research, mathematics.

The problem in industrial design teaching is that so many of the students, who may come into the field from foundation course, have inbuilt antagonisms towards science, technology and mathematics. Not only that, but many have developed certain skills which justify such a stance.

As P. W. Bridgman pointed out in writing about Thermodynamics, the connotations of mathematical propositions are often difficult to swallow while at the same time retaining a high degree of specificity.

Design students are for the most part alienated from a real context of their products by the divisibility of ignorance promoted in schools (e.g. the arts don't need mathematics and Latin, so mathematicians don't need French and art). This alienation stretches out into professional practice in dealing with the divided labour and responsibility regimes in engineering-based industries.

One lone area of design teaching makes a stand, and makes pertinent and stringent requirements. That area is architecture—whatever else its faults may be at least it makes a goal of broad education plus demonstrable capability in science and/or mathematics as a basic requirement for entry. In architecture the course is also of a length appropriate to developing a wide range of skills prior to practice.

Yours sincerely, MARTIN WOLTERSEN, Regional College of Art, Hull.

From Professor Frank Haight Sir—I was interested to read Clive Ashwin's article "How to bridge a deep design fault that leads to disaster" (THES, January 23). I am, by the way, equally interested to learn that the Royal College of Art and the Royal College of Design are negotiating the formation of a joint postgraduate course in design engineering.

The course will be a synthesis of the educational responses and aims to produce designers of intellectual calibre able to combine sound engineering practice with creativity and flair.

Yours faithfully, FRANK HAIGHT, Professor of Industrial Design, Royal College of Art, London.

NOTICE BOARD

Chairs

Dr J. B. Goodenough, leader of the Electronic Materials Group, Lincoln Laboratory, Massachusetts Institute of Technology, has been appointed to the professorship of inorganic chemistry at the University of Oxford.

Noticeboard is compiled by Myrna Monsurati and Patricia Santinelli

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Appointments

Dr J. B. Goodenough, leader of the Electronic Materials Group, Lincoln Laboratory, Massachusetts Institute of Technology, has been appointed to the professorship of inorganic chemistry at the University of Oxford.

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of the Heritage Education Group up by Lady Birk to continue efforts in conservation education.

Dr K. Attenborough, Faculty of Technology, The Open University, Milton Keynes, has been appointed to the School of Education, Leicester University. Dr Alan Rogers, Department of Adult Education, Nottingham University.

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09.35 Mathematics foundation course: The Question Why (U300; prog 2).
09.40 Mathematics foundation course: The Question Why (U300; prog 2).
09.45 Mathematics foundation course: The Question Why (U300; prog 2).
09.50 Mathematics foundation course: The Question Why (U300; prog 2).
09.55 Mathematics foundation course: The Question Why (U300; prog 2).
10.00 Mathematics foundation course: The Question Why (U300; prog 2).

Tuesday February 17

08.00 Mathematics foundation course: Errors that Die (M100; prog 2).
08.05 Mathematics foundation course: Affixes (A100; prog 2).
08.10 Mathematics foundation course: Topics in pure mathematics: Cartesian geometry (M200; prog 2).
08.15 Mathematics foundation course: Properties (M200; prog 2).
08.20 Mathematics foundation course: Continuity and change in Modern Geometry (M200; prog 2).
08.25 Mathematics foundation course: Using Libraries: The University Library (U100; prog 2).
08.30 Mathematics foundation course: Curriculum design and development: The MacKenzie Film (U300; prog 2).
08.35 Mathematics foundation course: Linear mathematics: The Dimension of a Vector Space (M200; prog 2).
08.40 Mathematics foundation course: The Question Why (U300; prog 2).
08.45 Mathematics foundation course: War and Society: Archive Film and Lecture (A100; prog 2).
08.50 Mathematics foundation course: Mathematics: Materials (M100; prog 2).
08.55 Mathematics foundation course: Comparative government and politics: The Question Why (U300; prog 2).
09.00 Mathematics foundation course: The Question Why (U300; prog 2).
09.05 Mathematics foundation course: The Question Why (U300; prog 2).
09.10 Mathematics foundation course: The Question Why (U300; prog 2).
09.15 Mathematics foundation course: The Question Why (U300; prog 2).
09.20 Mathematics foundation course: The Question Why (U300; prog 2).
09.25 Mathematics foundation course: The Question Why (U300; prog 2).
09.30 Mathematics foundation course: The Question Why (U300; prog 2).
09.35 Mathematics foundation course: The Question Why (U300; prog 2).
09.40 Mathematics foundation course: The Question Why (U300; prog 2).
09.45 Mathematics foundation course: The Question Why (U300; prog 2).
09.50 Mathematics foundation course: The Question Why (U300; prog 2).
09.55 Mathematics foundation course: The Question Why (U300; prog 2).
10.00 Mathematics foundation course: The Question Why (U300; prog 2).

Wednesday February 18

08.00 Mathematics foundation course: Errors that Die (M100; prog 2).
08.05 Mathematics foundation course: Affixes (A100; prog 2).
08.10 Mathematics foundation course: Topics in pure mathematics: Cartesian geometry (M200; prog 2).
08.15 Mathematics foundation course: Properties (M200; prog 2).
08.20 Mathematics foundation course: Continuity and change in Modern Geometry (M200; prog 2).
08.25 Mathematics foundation course: Using Libraries: The University Library (U100; prog 2).
08.30 Mathematics foundation course: Curriculum design and development: The MacKenzie Film (U300; prog 2).
08.35

BOOKS

Desolation

Historian of the senses

When Europe was invaded

LAKE
UNIVERSITY

Classified Advertisements

Index to Appointments Vacant, Wanted and other classifications

Appointments vacant

Universities
Fellowships & Studentships
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Technical Colleges
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Colleges and Departments

of Art
Administration
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Government
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Adult Education
Librarians
General Vacancies

Appointments wanted

Other classifications
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For Sale and Wanted
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Holidays and Accommodation
Typing and Duplicating

Universities

University of the Witwatersrand Johannesburg, South Africa Appointment of Vice-Chancellor

The present Vice-Chancellor, Professor G. R. Bozzoli, has elected to retire at the end of 1977. The Vice-Chancellor, as the University's chief executive officer, reports to the Council and is the Chairman of the Senate. He is responsible for all aspects of University operations, academic, financial and administrative, and is expected to have a deep commitment to goals of excellence in higher education, i.e. scholarship, teaching and research. A joint committee of the Council and the Senate has been established under the Chairmanship of Dr Francis Hill, Chairman of the Council, to recommend the appointment of a successor. The committee invites persons who are interested in the appointment and may wish to be considered as candidates to communicate with Dr Hill under private and confidential cover. The committee would also welcome suggestions or nominations from others of the names of suitably qualified persons

who may be interested. All enquiries and suggestions will be treated as confidential to the committee. Although the effective date of assumption of office will be 1 January, 1978, the Council may wish the Vice-Chancellor Elect to undertake a tour of overseas and South African universities before he formally assumes office. This may require his presence in Johannesburg several months beforehand. It is the University's policy not to discriminate in the appointment of staff or the selection of students on the ground of sex, race, religion or colour. Further particulars relating to this policy are included in the information sheet available from either Dr Hill or the Registrar, University of the Witwatersrand, P.O. Box 1178, Johannesburg 2000, Republic of South Africa (or by telephoning the London Representative, telephone London 01-405 5834). Formal applications must reach Dr Hill by not later than Saturday, 17th April, 1978.

The British Council

invites applications for the following posts:

Assistant Professor of English (Thailand)

Asian Institute of Technology, Bangkok. Graduate with postgraduate TEFL qualification and 3 years' relevant experience. Salary: £4,389-£5,409 p.a.

Benefits: free furnished accommodation; overseas and children's allowances and other benefits. Two-year contract. 76 UU 17

Lecturers in English (Iraq)

Department of European Languages, Basrah University. Graduates with TEFL qualification. University teaching experience desirable.

Salary: £2,400-£3,000 p.a. (MA); £3,000-£5,000 p.a. (MA); £5,000-£7,000 p.a. (PhD).

Benefits: free furnished accommodation; housing allowance; an local taxation; 2-months paid annual leave plus 2 weeks mid-year break. One-year contract, renewable. 76 AU 1-4

Return fares are paid. Local contracts are guaranteed by the British Council.

Please write, briefly stating qualifications and length of appropriate experience: quoting relevant reference number for further details and an application form to The British Council (Appointment), 63 Davies Street, London W1V 3AA.

University of New Brunswick

Vice-President

(SAINT JOHN)

The University of New Brunswick invites applications for the newly-established position of Vice-President (Saint John). For at least part of the term the Vice-President will also be Dean of the Faculty at the Saint John campus. The Vice-President (Saint John) will report directly to the President and will be the senior academic and administrative officer for the Saint John campus. The Saint John campus of the University of New Brunswick has at present more than 50 full-time faculty members, 500 full-time students and 1,200 part-time students and currently offers four-year undergraduate bachelor degrees in Arts and Business Administration, as well as the first two years of degree programs in Science, Engineering and Computer Science. The first year of degree programs in Forestry and Physical Education are offered.

The Vice-President (Saint John) will be responsible for initiating and implementing new programs, full-time and part-time, some of which are now under consideration, and will be the President's principal advisor, on all matters academic and administrative, relating to the Saint John Campus.

The candidate must be an established scholar, with considerable experience in teaching and administration. The successful candidate will receive a professorial appointment. Above all, the candidate will be chosen for ability to provide leadership on a developing campus.

Term: 5 years, with possibility for renewal

Effective Date: July 1, 1978

Applications should be received no later than April 15, 1978, and should be addressed to the Chairman of the Search Committee: Dr. J. M. Anderson, President, University of New Brunswick, Fredericton, N.B. E3B 5A3, Canada.

UNIVERSITY OF DUBLIN

Trinity College

CHAIR OF PHILOSOPHY

An additional Chair of Philosophy is being created in the Department of Philosophy. The post will carry responsibility for the leadership of the Department.

Further particulars may be had on application to:

The Secretary,
Trinity College,
Dublin 2

to whom applications should be sent preferably by 17 March, 1978.

AUSTRALIA

FLINDERS UNIVERSITY OF SOUTH AUSTRALIA

FOUNDATION CHAIR OF MEDICINE

Applications are invited for

appointment to the Foundation

Chair of Medicine in the

School of Medicine.

The Foundation Chair of Medicine

will be held by a person of

international standing in the

field of medicine. The holder

will be expected to contribute

to the development of the

School of Medicine and to

the University as a whole.

Applications should be sent to

the Vice-Chancellor, Flinders

University of South Australia,

Sturt Road, Adelaide, South

Australia.

Further particulars may be

obtained on application to

the Vice-Chancellor.

Applications should be sent

to the Vice-Chancellor, Flinders

University of South Australia,

Sturt Road, Adelaide, South

Australia.

EDINBURGH

THE UNIVERSITY

DEPARTMENT OF CLASSICAL

ARCHAEOLOGY

LECTURESHIP

Applications are invited for

appointment to the Department

of Classical Archaeology.

The successful candidate will

be expected to contribute to

the development of the

Department and to the

University as a whole.

Applications should be sent to

the Vice-Chancellor, The

University of Edinburgh,

George Square, Edinburgh

EH8 9JY, Scotland.

Further particulars may be

obtained on application to

the Vice-Chancellor.

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to the Vice-Chancellor, The

University of Edinburgh,

George Square, Edinburgh

EH8 9JY, Scotland.

Further particulars may be

obtained on application to

the Vice-Chancellor.

AUSTRALIA

UNIVERSITY OF ADELAIDE
Applications are invited for the following appointments:

READER IN PHYSICS

The University of Adelaide

invites applications for the

position of Reader in Physics.

The successful candidate will

be expected to contribute to

the development of the

Department and to the

University as a whole.

Applications should be sent to

the Vice-Chancellor, The

University of Adelaide,

Marine Parade, Adelaide

SA 5000, Australia.

Further particulars may be

obtained on application to

the Vice-Chancellor.

Applications should be sent

to the Vice-Chancellor, The

University of Adelaide,

Marine Parade, Adelaide

SA 5000, Australia.

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University of Adelaide,

Marine Parade, Adelaide

SA 5000, Australia.

Further particulars may be

obtained on application to

the Vice-Chancellor.

UNIVERSITY OF BENIN-NIGERIA Academic Staff Vacancies

The University of Benin (which is a Federal Government University) invites applications from suitably qualified candidates to fill a number of academic staff positions. The University is a young, dynamic and rapidly expanding institution, and offers all the scope and rewards of pioneering effort. Vacancies exist at the levels of (a) Professor/Associate

Professor (P/AP) (b) Senior Lecturer/Lecturer (SL/L) and (c) Assistant Lecturer (AL) in each Department. Additional posts are shown below where applicable. Applicants are advised to indicate clearly the position, Faculty/School and Department for which they wish to be considered and their own field of specialisation.

VIII. QUALIFICATIONS REQUIRED OF APPLICANTS

The following qualifications are required in respect of the various categories of posts:-

(a) Professor/Associate Professor. High academic qualifications in the relevant field, preferably up to Ph.D. Several years of teaching, research or professional experience in a University or comparable institution complemented by adequate scholarly publications. Ability to initiate and develop research projects and to supervise postgraduate research programmes. Some Administrative Experience.

(b) Senior Lecturer. Sound Academic qualifications, preferably with a Ph.D. Not less than five years of teaching, research or equivalent professional experience in a University or comparable institution. Ability to initiate and develop research projects, supported by evidence of scholarly publications. Experience in directing academic group discussion will be an advantage.

(c) Lecturer. Sound academic or equivalent professional qualifications, preferably a higher degree. Level of appointment will depend on teaching or research experience in a University or comparable institution. Evidence of scholarly publications will be an advantage.

(d) Assistant Lecturer. A Master's degree with demonstrable ability for teaching and research. Candidates with good honours degree not below Second Class Honours (Upper Division) or its equivalent with adequate teaching or research experience, will be considered.

(e) Senior Librarian/Librarian. A good university degree with professional qualification in Librarianship. Level of appointment will depend upon qualifications and experience. Preference will be given to candidates with demonstrable ability and the experience to organise and take charge of one of the major sections of the University Library, preferably the Technical Services, Acquisitions or Serials.

(f) Assistant Librarian-in-Training. A good university degree and willingness to undertake professional training at a later date.

All applicants for teaching or research positions in Medicine are required to possess a good medical degree registered or registrable with the Nigeria Medical Council, as well as relevant postgraduate professional qualifications.

IX. SALARIES AND CONDITIONS OF SERVICE

(a) Salaries
Professor N11,288-N12,420 p.a. (£8,285-£9,132)
Associate Professor N8,868-N9,828 p.a. (£6,520-£7,226)
Senior Lecturer/Senior Research Fellow N7,284-N8,724 p.a. (£5,708-£6,414)
Senior Librarian N7,104-N7,752 p.a. (£5,883-£6,201)
Lecturer or Research Fellow Grade I N6,444-N6,984 p.a. (£4,738-£5,136)
Lecturer or Research Fellow Grade II N5,480-N6,432 p.a. (£4,014-£4,729)
Assistant Lecturer/Assistant Research Fellow N4,389-N5,340 p.a. (£3,211-£3,926)

Note: £1 sterling = N125

(b) Other Conditions
The appointment of Professor is to retiring age which is normally 60 years; for other posts below professor, appointment is normally on probation which may be confirmed after two years of satisfactory service. All posts are pensionable. But contract appointments for specific periods can be arranged, in which case the staff member will be eligible to a "Contract Addition" equivalent to 25% of basic salary. Benefits include payment of a car allowance, provision of part-furnished accommodation or payment of rent allowance in lieu thereof; passages for appointees and family (wife and up to five children) on appointment. Local Leave Allowance paid annually, and/or overseas leave passages every other year for expatriates.

(c) Method of Application
Applications should contain the following information:
Full name, date and place of birth;
Nationality and permanent home address;
Current postal address;
Post for which applicant wishes to be considered;
Marital status, number of children (with ages);
Academic and professional background—with qualifications and experience;
Working experience, present employment, status and salary;
Research and publications (copies to be supplied to the University, if available);
Non-academic interests/Extra-curricular activities;
Passport number (if any) with date and place of issue;
Names and addresses of three referees.
2 copies of the application are to be forwarded to:
The Registrar (Appointments Division),
University of Benin, P.M.B. 1154,
Benin City, Nigeria

and 1 copy to the Inter-University Council, 66/67 Tottenham Court Road, London, W1P 0DT, from whom further particulars are available. Closing date: March 7, 1976.

I. FACULTY OF SCIENCE

1. Department of Geology

P/AP, SL/L, AL in the following: Mineralogy; Geophysics; Igneous and Metamorphic Petrology; Palaeontology; Stratigraphy.

2. Department of Chemistry

P/AP, SL/L, AL in the following: Industrial; Organic; Inorganic; Theoretical Chemistry.

3. Department of Mathematics

P/AP, SL/L, AL in the following: All areas of Mathematics, its Physical and Non-Physical application; Mathematical Education; History of Mathematics; Mathematical Statistics; Analysis and Mathematical Methods; Functional Analysis and Topography (for post of P/AP).

4. Department of Physics

P/AP, SL/L, AL in the following: Applied Geophysics; Metallurgy and Materials Science; Theoretical; Mathematical Physics; Optometry.

5. Department of Biological Sciences

P/AP, SL/L, AL in the following: Biology (Ecology, Genetics, Biostatistics); Botany (Cellular Biology); Microbiology (Food/Industrial Microbiology, Microbial Ecology, Microbial Biochemistry and Physiology, Microbial Genetics); Zoology (Hydrobiology, Ichthyology, Vertebrate Zoology, Animal Physiology).

II. FACULTY OF ENGINEERING

1. Department of Chemical/Petroleum Engineering

P/AP, SL/L, AL and Research Fellows in the following: Petroleum Reservoir Engineering; Drilling Technology; Process Dynamics; Control and Optimization; Systems Analysis; Chemical Technology; Process Design.

2. Department of Electrical and Electronic Engineering

P/AP, SL/L, AL in the following: Electronics Physics and Devices; Electrical Measurements and Instrumentation; Electrical Power—Machines and Utilisation; Control Theory and Systems; Communications Theory and Systems.

3. Department of Civil Engineering

P/AP, SL/L, AL in the following: Soil Mechanics; Hydraulics; Structures; Highway Engineering.

4. Department of Mechanical Engineering

P/AP, SL/L, AL in the following: Solid Mechanics; Machine Design; Thermodynamics and Fluid Mechanics; Metallurgy.

5. Department of Production Technology and Industrial Engineering

P/AP, SL/L, AL and Senior Research Fellow/Research Fellow (Product Development) in the following: Industrial Engineering; Engineering/Workshop Technology.

III. FACULTY OF ARTS & SOCIAL SCIENCES

1. Department of Economics and Business Studies

P/AP, SL/L, AL in the following: Econometrics; Quantitative Methods/Statistics; Accountancy; Business Policy; Marketing; Business Science; Production Management.

2. Department of Modern Languages

P/AP, SL/L, AL in the following: English Literature; Teaching English as a Second Language; Linguistics; Especially African Linguistics; Edo; French Language/Literature; African Literature.

3. Department of History & Creative Arts

P/AP, SL/L, AL in the following: History (African, American, Russian, Middle Eastern, Far Eastern and Asian); Creative Arts (Drawing, Painting and Graphics, Theatre Studies).

4. Department of Social Studies

P/AP, SL/L, AL in the following: Geography (Climatology,

Overseas

University of Riyadh, Riyadh, Saudi Arabia

The Medical Faculty

Teaching Staff for:- Pre-medical and Pre-clinical subjects

The Medical College of the University of Riyadh invite applications from both men and women, but posts have to be filled to allow for separate instruction to men and women, in segregated classes for the time being.

Assistant Professors & Lecturer

The language of instruction is English, and the following appointments are to be made.

	Pre-medical	Pre-clinical
Biology	Assistant Professors (2 Posts, Female)	Assistant Professors (3 Posts, 1 Male, 2 Female)
Chemistry	Assistant Professors (3 Posts, 1 Male, 2 Female)	Assistant Professors (2 Posts, Female)
Physics	Assistant Professors (4 Posts, 2 Male, 2 Female)	Lecturer (1 Post, Female)
Anatomy		
Biochemistry		
Physiology		

*Post of Assistant Professor is equivalent to Lecturer in the United Kingdom.

*Post of Lecturer is equivalent to Assistant Lecturer in the United Kingdom.

* Experience

Must be in possession of Doctorate or Medical degree, with some teaching experience at University level.

* Salaries * Allowances * Gratuities

No Income Tax. Currency in Saudi Arabia freely convertible and transferable. (SR 7.2 approximately equivalent to £1)

Monthly Salaries Assistant Professor SR 3,600 x 200—4,800;

Lecturer SR 3,200 x 155—5,725

Allowances Housing Allowance or accommodation provided by University. Instalment Allowance (on first appointment); Professional Allowance for registered medical practitioners

—20% of salary for Assistant Professors and 25% for Lecturers

Gratuity Dependent on length of service. Home leave passages paid once yearly for incumbent and up to 3 dependents.

* Appointments

Appointments are for one year or longer and renewable.

* Applications

Applications and detailed curriculum vitae (2 copies of each) including names of 2 referees to arrive not later than 20th March 1976, to be addressed to:—The Dean, Medical Faculty, University of Riyadh, P.O. Box 2926 Riyadh, Saudi Arabia.

Further particulars may be obtained from the: The Co-ordinator, University of London/University of Riyadh, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT.

Saudi Arabia

Administration

THE ASSOCIATED EXAMINING BOARD
for the General Certificate of Education

RESEARCH OFFICER

Applications are invited for the post of Research Officer in the Board's Research Unit at Aldershot. The Unit is concerned primarily with research in the field of educational measurement appropriate to the needs of the Board. Applicants should be graduates preferably with a Higher Degree in the educational area. A keen interest in current techniques of educational measurement and a knowledge of research methods in education are necessary. Although not essential, experience of teaching and public examination procedures would be advantageous.

This appointment, initially for a period of three years with the possibility of further extension, will be on a salary scale of either £3,174 to £4,806, i.e. aligned with University Teachers' Scale points 1 to 9, or £4,602 to £6,030, i.e. aligned with University Teachers' Scale points 8 to 15. The starting salary will depend on age, qualifications and experience.

Further information, together with an application form, may be obtained from the Personnel Manager, The Associated Examining Board, Wellington House, Station Road, Aldershot, Hampshire, GU11 1BQ, to whom completed forms of application, with the names of two referees, must be returned by Friday, 5th March 1976.

Colleges of Higher Education

DONCASTER LOCAL EDUCATION AUTHORITY
DONCASTER METROPOLITAN INSTITUTE
OF HIGHER EDUCATION
Appointment of Deputy Principal
Group 10

Applications are invited from persons with appropriate qualifications and experience for the post of Deputy Principal of Doncaster Metropolitan Institute of Higher Education which will be formed on the amalgamation in September 1976, of Doncaster College of Art, Doncaster College of Education, Doncaster College of Technology (including the former Metheringham College of Further Education) and Sleaford College of Education.

Applicants should have high academic qualifications and substantial experience in the education service, including a significant background of work in Further Education.

The new Institute will be placed in Group 10 and the salary will be £10,396 per annum.

Application forms and further particulars may be obtained from the Director of Education, Education Department, Princegate, Doncaster, to whom completed forms should be returned by 23rd February, 1976.

General Vacancies

LONDON

NATIONAL UNION OF STUDENTS

ADVERTISE

The Education section of the

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Courses

Garnett College

Advanced Courses
of Study in
Further Education

Application is invited for the following courses:

Masters Degree (In Education) University of Leeds

Two years' part-time study.

Specializes in extended study of further education. Equip students to undertake research in further education.

Candidates must have initial teacher training and have reached a high level of attainment in the Diploma in Further Education or its equivalent.

Diploma in Further Education University of Leeds

One year full-time or three years' part-time study.

Relates the study of further education to contemporary educational theory and to current social and economic developments. Students can further specialize in Psychology, Sociology, Educational Technology, Adult Education, etc.

Is recognized by a number of universities as a 'qualifying' examination for courses for higher degrees.

Candidates should have substantial teaching or administrative experience in further education or industrial training.

Diploma for Professional Tutors in Further Education University of London

Two years' part-time study.

Examines developments affecting the administration and curriculum of further education.

Studies modern techniques in the training of teachers for further education.

Investigates the construction and organization of staff development programmes.

Candidates should be trained teachers with three years' appropriate teaching experience.

Bachelor of Education Council for National Academic Awards

Three or four years' part-time study.

Extends the educational studies of the Certificate in Education course. Prepares candidates for further study and research in further education.

Candidates should be serving teachers with an initial teaching qualification and a minimum of two years' experience.

ilea

Candidates for all courses should apply to us as possible specifying the course(s) in which they are interested to: The Principal (Ref. 1282), Garnett College, Dovehouse House, Richmond Lane, London SW15 4HR (01-788 238).

General Vacancies continued

SENIOR
TRAINING OFFICER
Technical

up to £6684

British Gas need a Senior Training Officer for their School of Fuel Management at Solihull.

This position carries responsibility for providing effective teaching and laboratory activities and for supervision and control of staff and resources. You will also be responsible for the technical content of lectures/demonstrations, the quality of presentation, and will deputise for the Head of the School as required.

You should be a Chartered Engineer with an honours degree in a technical discipline, preferably with a higher degree, and teaching qualification or experience. Previous experience in a relevant research post or in industrial or commercial sales desirable.

Salary will be in a range £3721-£6684 depending upon age, qualifications and experience.

Please send applications, quoting reference BR/418/443/THB, to the Assistant Personnel Manager (HQ), British Gas, 59 Brynston Street, London W1A 2AZ.

Closing date is 23rd February 1976.

Interviews will be held on 17th March 1976, at the School of Fuel Management, Solihull.

BRITISH GAS

Only two colleges at present teach London

front of the jumper. On landing, they are then swung down and backward, with the point of landing as fulcrum and the body swinging forward.

No advantage can be obtained by swinging the weights while in the air or while running, a fact which follows from Newton's first law of motion.

On putting the above principles into practice, I did indeed extend my standing jump by 15 cm, using two 1 kg weights.

Yours faithfully,

L. R. B. ELTON

Professor of Science Education,

Goldsmiths' College,

London University.

Only two colleges at present teach London

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Sociology split

University sociology and social administration degrees, Bedford College and Goldsmiths' College. At Bedford College the sociology Department under Professor McGregor is phasing out the present sociology degree against the wishes of its sociology teachers in favour of a new social science and administration degree, which is obviously vocally oriented to social administration and social work, and which has a greatly reduced sociological element.

At Goldsmiths' a large sociology department was headed until a year ago by Professor Pinker, holder of a chair in social administration, appointment to which is controlled by Bedford College. Professor McGregor is a member of the governing body of Goldsmiths' College. The department was forced to teach the new social science and administration degree, which was given parity with sociology, although only a small minority of teaching staff could be defined as social administrators.

Of course this necessitated additional resources for social administration and was followed by vigorous competition over resource allocation. Strong pressure was exerted on the department to split into separate social administration and sociology departments (unsuccessful so far) and students were strongly pressured to opt for the social science and administration degree.

The sociological content of this recently introduced degree is now being progressively eliminated, so that its students, who came expecting to read for a degree advertised as having a sociological core, are now with dismay learning they can no longer choose sociologically oriented optional courses and that its core is being drastically diluted. Instead they have the Hobson's choice of more vocationally oriented courses.

In this case a large department has been undermined and a wedge has been driven between people working in sociology and social administration, which has no educational justification whatsoever, to the extent now that students faced with examinations are afraid their results will suffer if they adopt a "sociological" approach.

At Chelsea College, where Professor Pinker now has a chair in "Social studies" and where Professor McGregor is also on the governing body, the sociology and psychology departments have been obliged to expand in the direction of social administration and social work, rather than in sociology or psychology.

Plainly, the social administration lobby, which is to be distinguished from the majority of those working in the area, is powerful with strong financial and general support from higher levels, where the lobby is regarded as one of the more useful agencies for the resolution of "social problems" as they are defined by those in power and authority.

In the context of cuts in educational expenditure this determined whittling away of sociology is a crucial factor in student survival for places on social administration courses, which is often given as the justification for preferring expansion in social administration. For student demand is here also a function of the supply of social administration places in relation to those available in sociology.

It is beyond dispute that social administration has developed overwhelmingly in conjunction with sociology rather than with any other subject and that this association provided the main theoretical rationale for the activities of the social administration lobby, while simultaneously providing it with a secure base from which to pursue its now openly declared special interests. To deny these, and/or historical and theoretical links between the two areas is to deny what this particular spokesman for social administration has always been careful previously to deny publicly.

The denial now, therefore, is tantamount to admitting what some of us have learnt from our own experience, namely, that the social administration lobbyist tends to nestle in convenient, permeable settings in order to use them for his own particular ends when the time is ripe.

While London University social administration is expanding at the expense of sociology but, more importantly, the particular pattern of expansion threatens the academic freedom of all those students and staff working within the long fields, who wish to maintain strong intellectual links between disciplines.

Only two colleges at present teach London

front of the jumper. On landing, they are then swung down and backward, with the point of landing as fulcrum and the body swinging forward.

No advantage can be obtained by swinging the weights while in the air or while running, a fact which follows from Newton's first law of motion.

On putting the above principles into practice, I did indeed extend my standing jump by 15 cm, using two 1 kg weights.

Yours faithfully,

L. R. B. ELTON

Professor of Science Education,

Goldsmiths' College,

London University.

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LETTERS TO THE EDITOR

Research and rubbish

from Professor W. D. Wall

Sir,—You report Sir William Pile as saying (THES, January 23) that a part of educational research was rubbish, that another part led nowhere and that "it is exceptional to find a part of research that hits the nail on the head".

It is illuminating to substitute in these statements "DES policy-making" for "educational research", and test both statements. Perhaps both are true, and if in fact this is so, one could ask whether this is in some measure due to DES attitudes to research, including the findings of research in education, including the development of the appropriate infra structure of organization, trained workers and finance.

After all, sound policy-making depends, among other things, upon soundly based

knowledge adequately evaluated. The fact that few of those who make policy in the DES have any research experience of any kind, and fewer still, one would surmise, a rigorous research training in any of the behavioural sciences, leads one to question their ability to evaluate research—indeed, even to formulate their problems in adequate research terms.

There is, moreover, no research council specifically preoccupied with research in education (though the SSRC has a committee), even though education is probably among the biggest of our national activities.

Yours faithfully,
W. D. WALL
Professor of the psychology of education,
Institute of Education,
London University.

Rhodesian reply

from Professor J. R. de S. Honey

Sir,—I'm sorry, but Alan Phillips's rejoinder (THES, January 9) just won't wash. If it is true, as he suggests, that a certain group of students believe the Rhodesian educational system, including the development of the university, to be harshly discriminatory, it becomes crucially important to discover first whether their belief is supported by concrete facts, and then if this belief, particularly regarding the university, can be shown to be in any way exaggerated or misconceived, it becomes more valuable to correct their misapprehension than, as Mr Phillips would have us do, to show sympathy and concern—or, worse, to enlarge their misconceptions in however high-minded a spirit of sympathy.

For this reason, there is real significance in Mr Phillips's reaction to my reference to near-murder in the 1973 demonstrations, which he finds "remarkable" and "sad", because he claims to know of academics in Britain who would dispute this as an emotive and unsubstantiated description of the events of 1973.

On an issue of fact like this, whom are we to believe? A selection of British academics influenced (perhaps) by the type of propaganda Mr Phillips purveys, or the scores of academic, administrative, secretarial and ancillary staff to whom I offer to introduce Mr Phillips personally, whose lives were at risk on the UK campus in those 1973 riots?

Mr Phillips's impressions are fallible; some of his statistics are just plain wrong. I fully appreciate that the success of his campaigns to raise funds in Britain for World University Services scholarships in Rhodesia is related to the kind of picture he can paint of the "plight" of African students at the University of Rhodesia. To that extent I sympathize with his predicament, the more so because of the excellent work WUS does in Rhodesia. But your readers deserve to be told that there is another side to the picture.

Yours faithfully,
J. R. de S. HONEY
Department of education,
University of Rhodesia.

HONGKONG
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